1330-X02 Printer

Operator’s Manual

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This equipment complies with FCC regulations for EMI.

WARNING!

This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case users, at their own expense, will be required to take whatever measures may be necessary to correct the interference.

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Chapter 1. Introduction

The MTX 1330 Printer is designed for high-volume printing and combines high reliability with convenient features such as modular paper handling, a 4-line, 80-character LCD that displays menus, an automatic forms thickness adjustment, and self-diagnostic messages. The 1330 produces clear, precise printing on up to six-part forms, accommodates continuous forms and cut sheet paper, and operates quietly for office environments.

A serial dot matrix bidirectional impact printer, the 1330 is available in one model:

- 1330-X02

This model prints in four qualities. The maximum print speeds (at 10 CPI in monochrome) in each quality are as follows (CPS = characters per second):

Fast Draft Quality*	**Data Processing Quality**	**Data Processing Text Quality**	**Near Letter Quality**
500 CPS	400 CPS	250 CPS	125 CPS

The 1330 is available with an 18-wire-shifting ruby print head. Output can be monochrome, four colors or 8 colors, depending on the ribbon cartridge installed. Comprehensive graphics support is offered through All Points Addressable (APA) Programmed Symbols, as well as Intelligent Printer Data Stream (IPDS). The 1330 also supports APL and 39 international character sets.

The 1330 supports several attachment cards that offer the highest possible flexibility for your corporate printing strategy. Some of the attachment cards feature a 3270 interface port, and parallel and serial ASCII input ports, thereby enabling automatic printer sharing between 3270 hosts and personal workstations. (See table at the top of the following page.)

*Fast Draft is only available in 3270 mode.

Attachment Boards	Communication Environments
Coax	-3270 hosts and controllers with A-Coax adapters
Coax/ASCII (Dual)	-3270 hosts and controllers with A-Coax adapters -Mainframes, minicomputers (IBM AS400, etc.), workstations, and personal computers with Centronics parallel and RS232/RS432 serial interfaces *Supports auto switching printer sharing between the 3270 and ASCII host.*
ASCII	-Mainframes, workstations, minicomputers (IBM AS400, etc.), and personal computers with Centronics parallel and RS232/RS432 serial interfaces

Interfacing with the 1330

A-Coax Attachment

The 1330 Coax can be attached to the following controllers via an A-type coax cable:

- Telex 046, 076, 274, and 276 controllers
- Memorex 2076, 2174, and 2274 controllers
- Memorex Telex 1174, 1274, and 1374 controllers
- IBM 3174, 3274, and 3276 controllers with “A” terminal ports
- IBM 3694 Document Processor
- IBM 4321, 4331, 4341, and 4361 processors through the standard display/printer adapter or expansion feature
- IBM 9370 processor

Emulation

The following printer emulations are available as standard features on the 1330 Coax:

- IBM 3268 – Emulates a non-IPDS IBM 4224 printer with IBM 3628 programmed symbols
- IBM 4224 – Emulates an IBM 4224 printer
- IBM 4230 – Emulates an IBM 4230 printer
- 2124 – Emulates a non-IPDS IBM 4224 printer with IBM 3268 programmed symbols and supports escape codes to select bar codes, formatting, fonts, highlighting, OCR printing, and so on

ASCII Attachment

With an ASCII attachment, the following features are available on the 1330.

Interfaces

The following interfaces are software selectable from the front panel:

- Centronics parallel
- RS-232C
- RS-422

Emulation

The following printer emulations are available as standard features on the 1330 ASCII:

- IBM Proprinter III and III XL
- TI-810 modified

Character Codes

In ASCII mode, the American Standard Code for Information Exchange (ASCII) character set is recognized by the 1330. See Appendix C, “Character Sets,” for information about ASCII character sets.

Print Buffer

In ASCII mode, the print buffer is a reserved area of memory for storing incoming data before it is printed. The buffer size is operator selectable for 2K, 8K, 16K, or 32K bytes.

ASCII Languages

The 1330 supports international languages through the use of its internal PC character set. Selection is made from the front panel during printer configuration.

Standard Features

Standard features of the 1330 are described below. Information for using these printing capabilities is presented in subsequent chapters of this manual.

Character Codes

In 3270 mode, the Extended Binary Coded Decimal Interchange Code (EBCDIC) character set is recognized by the 1330, as well as the SNA Character String (SCS). See Appendix B of this manual for character code charts for SCS support.

Color

The 1330 can print in monochrome or color, using an operator installable recirculating cloth ribbon cartridge. Two monochrome ribbons, a 4-color accent ribbon (black, red, blue, and green), and a subtractive 8-color ribbon (black, red, blue, green, yellow, magenta, cyan, and brown) are available.

Paper Handling

The 1330 comes standard with pull tractors for continuous forms feeding, and allows for easy paper loading at the front of the printer. Pinfeed forms from 3 to 14 inches (7.6 to 35.6 cm) long and 3 to 15 inches (7.6 to 38.1 cm) wide can be used. This configuration is especially suited for a large volume of work or work that requires little operator intervention.

Print Qualities

The 1330 can print in four qualities:

- Fast Draft Quality (FD) (available only in 3270 mode)
- Data Processing (DP)
- Data Processing Text (DP Text)
- Near Letter Quality (NLQ)

All print qualities are selectable via the operator control panel.

Multiple Copies

The 1330 can print multiple copies, one original plus five copies, total thickness not to exceed 0.025 inch (0.64 mm). The recommended maximum thickness for multipart forms is 0.018 inch (0.46 mm).

3270 Languages

The 1330 enables the operator to select from 39 international language character sets. Selection is made during printer configuration. The attached control unit should be configured for the same language.

Screen Sizes

Any of the following display buffer sizes can be selected for print operation:

- 1920 bytes
- 2560 bytes

- 3440 bytes
- 3564 bytes

The size can be selected by the operator during configuration.

Self-Diagnostic Testing

The 1330 has a self-diagnostic ability to ensure that the printer is in good working condition. If an error condition is encountered, the 1330 informs the operator by displaying an error message on the control panel. Should this occur, refer to the error message chart in Appendix A of this manual.

Audible Alarm

The 1330 features an audible alarm that sounds when the printer needs operator assistance (such as when the paper is skewed or out). In this situation it will continue to beep intermittently, unless it is disabled.

Programmed Symbols

In 3270 mode, six symbol sets are operator configurable either as six single plane sets or as three single plane sets and one triple plane set.

IPDS

Intelligent Printer Data Stream (IPDS) is a structured field datastream for managing printing processes and data objects. IPDS uses All Points Addressability (APA) to enable the user to position text, graphics, image data, overlays, and bar codes at any defined point on a printed page. Extended memory is recommended for graphics applications.

Optional Features

The following optional accessories are available for the 1330. These items can be ordered through your sales representative.

Memory

This feature adds 512K bytes of RAM memory to the standard 128K bytes of memory for a total of 640K bytes. The extra memory is recommended for the following applications: IPDS, programmed symbols, ASCII graphics, ASCII downloaded fonts, and dual host (auto-switching) operations.

Continuous Forms Module

The continuous forms module provides the operator with a reliable way of feeding the 1330 with continuous forms.

Forms Handler Module

The Forms Handler module is operator installable in the front of the printer to vertically position forms. The module's forms tractors are adjustable for two options:

- Document on Demand (DOD) option – used for continuous forms
- Document Insertion Device (DID) option – used for cut sheet/single sheet forms

Printer Pedestal Stand

The pedestal stand is designed so that the printer can be securely seated. The forms supply is placed in the stand's paper compartment and feeds into the front of the 1330 from below.

Forms Stand

The forms stand is placed behind the printer to hold both new and printed fanfold forms.

Related Manuals

Appendix D of this manual contains programming information for special 1330 escape codes.

For more information on printer control codes in Appendix B, see the *IBM 4224 Printer Product and Programming Description Manual*, GC31-2551; *IBM 4230 Printer Product and Programming Description Manual*, GC40-1701-00; *IBM 3270 Information and Display System*, GA23-0061; *IBM 3268 Printer Models 2 and 2C Description*, GA27-3268; *IBM Proprinter III and IIIXL Guide to Operations*, SA34-2065-1; *IBM Proprinter Family Technical Reference*, SC31-2589-3; and the *ANSI Standard X3.64-1979*.

Chapter 2. Preparing to Operate the 1330

The 1330 printer has been designed for customer setup and preliminary check. Please read this chapter before you try to install or relocate your 1330.

Inspecting the Package

When the packaged 1330 printer arrives, inspect the carton for physical damage before unpacking it. If the carton is damaged, do not open it. Notify the Traffic Department or your sales representative, as appropriate.

Also call the delivery carrier to request examination of the damage. The carrier is required to complete and sign a damage report form.

If you do not see any damage, unpack the printer according to the following instructions.

Unpacking the Printer

Refer to Figure 2-1 and follow these steps to unpack the 1330:

Caution

The 1330 weighs 66 pounds (29.9 kg). Two people may be required to move the printer to its operating location.

1. Move the packaged printer to the work area and place the carton in an upright position.
2. Remove the packing list envelope from the outside of the box.
3. Open the flaps to the top of the box.
4. Remove the operator's manual from the top of the printer.
5. Remove the continuous forms module feature (if ordered) located on top of the printer.
6. Remove the printer from the box and remove the foam end caps and the bag from the printer.
7. Remove the protective film from the top of the printer.
8. Lift the printer cover and remove the ribbon and power cord.

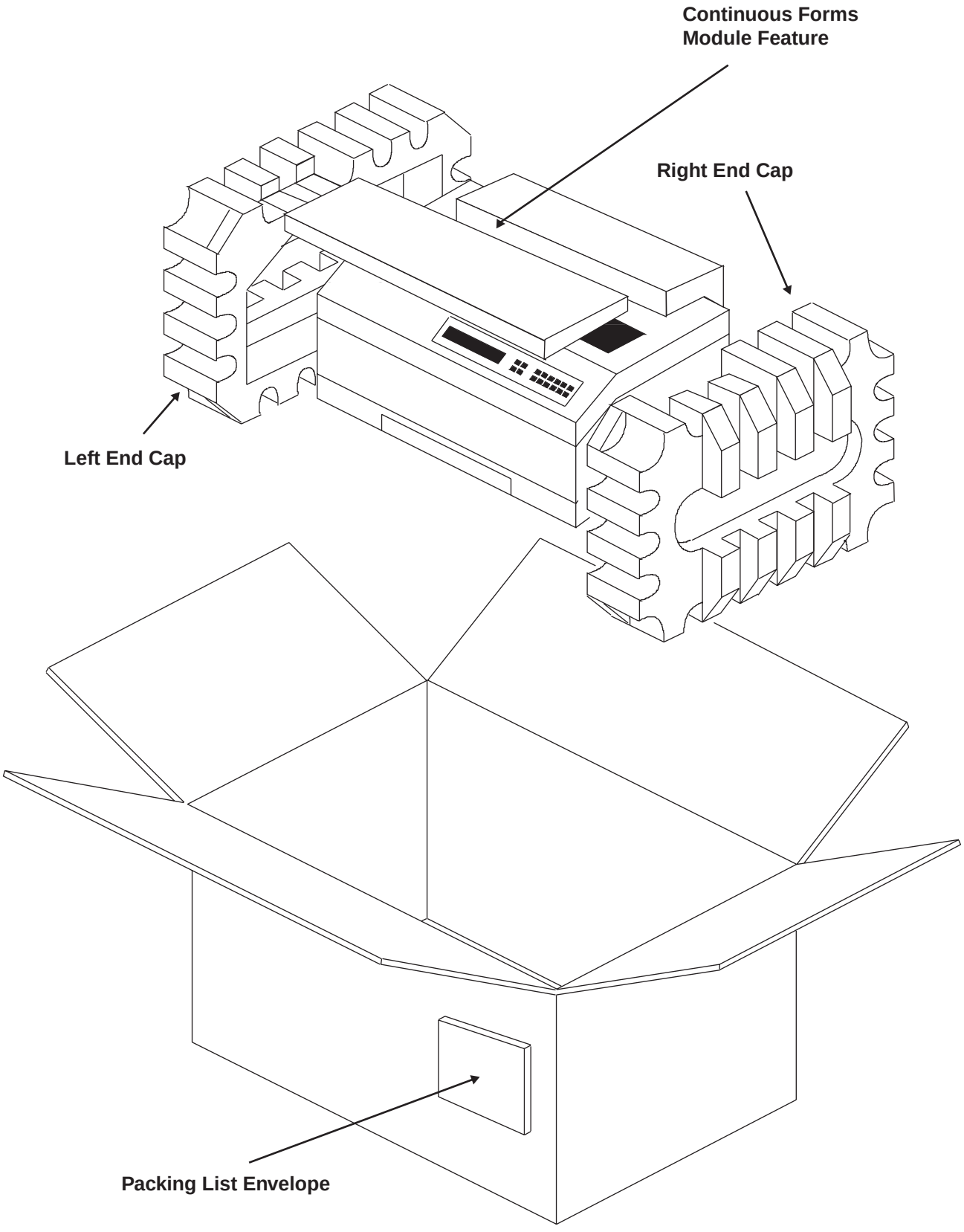


Figure 2-1. Unpacking the 1330

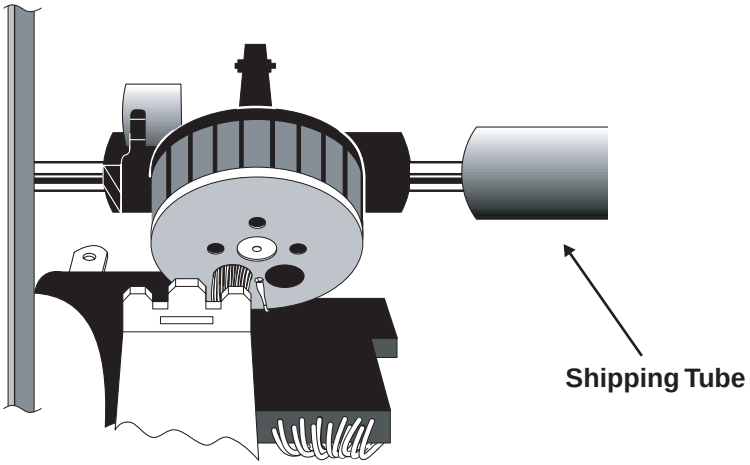


Figure 2-2. Foam Shipping Tube

9. The carriage on the 1330 is restrained by a foam shipping tube to prevent shifting during shipping. Before installing the printer, remove this tube, illustrated in Figure 2-2.

Caution

Failure to remove the carriage shipping tube before turning on the 1330 may result in damage to the printer.

Installation Preparation

The location for the 1330 must meet the following physical and environmental requirements:

Power:	90-264 VAC at 47-63 Hz, single phase
Clearance:	6 in (15.2 cm) on all sides
Dimensions:	25.8 in (65.5 cm) wide 12.4 in (31.5 cm) high 18.8 in (47.8 cm) deep
Surrounding Temperature Range:	50 - 105F (10- 40.6C)
Relative Humidity:	8% to 80% (noncondensing)

After unpacking the 1330, you are now ready to begin installing it.

Installing the Ribbon Cartridge

A monochrome ribbon cartridge is shipped with the 1330. Remember that if you have a monochrome ribbon installed, the 1330 will print in one color only. A multitrack color ribbon cartridge must be installed to allow printing in different colors.

Ordering Ribbons

You can use a Shifting ribbon or a Nonshifting ribbon in the 1330-X02. The ribbons have the same character life and for monochrome printing can be used interchangeably.

Caution

Use only approved ribbons that are available from MTX. Third party ribbons may not be compatible, resulting in improper operation and decreased print head life.

To order additional ribbon cartridges for the 1330-X02, contact your MTX Sales Representative. Request the following ribbon cartridge part number(s):

Ribbon Type	MTX P/N
4-Color (Accent) – Shifting	955870-002
Monochrome – Nonshifting	955362-001

Following are instructions for installing each ribbon type.

Installing a Shifting Ribbon

This section explains how to install a Shifting ribbon cartridge. You will need to install a new ribbon when the existing ribbon wears out. Refer to Figure 2-3.

1. Make sure that the printer's Power switch is in the O (OFF) position. Unplug the power cord from the outlet.
2. Raise the printer cover.
3. Set the platen gap lever away from the platen (toward you) as far as it will go (see Figure 2-4).
4. Slide the print head to the middle of the printer.

Caution

The print head may be hot. To move it, grasp the print head drive belt.

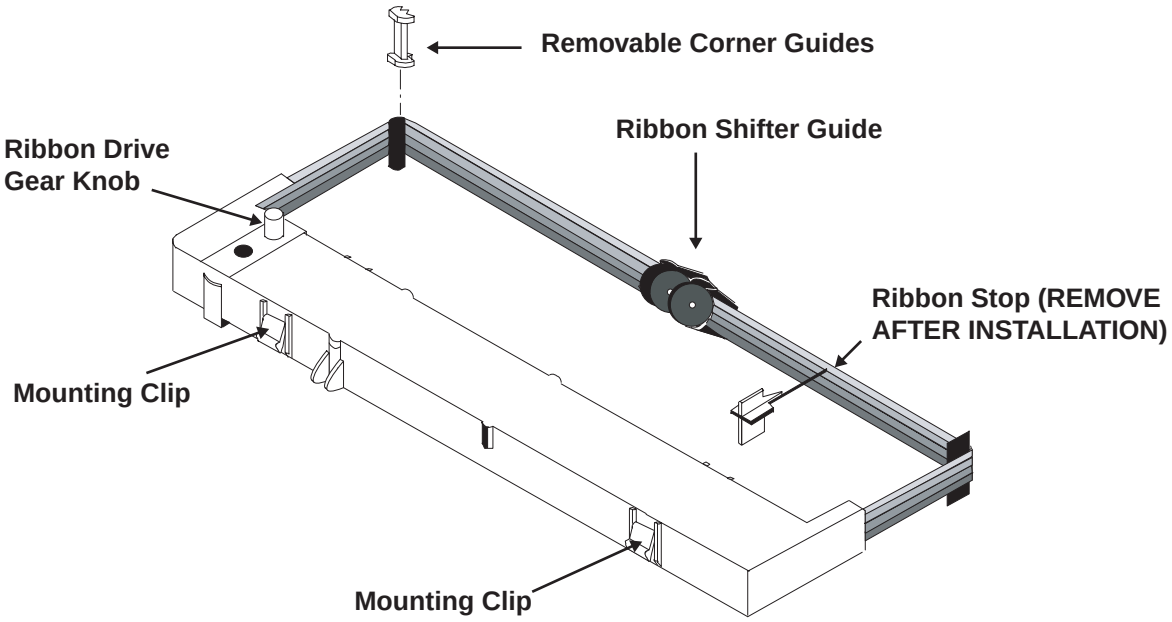


Figure 2-3. Shifting Ribbon Cartridge

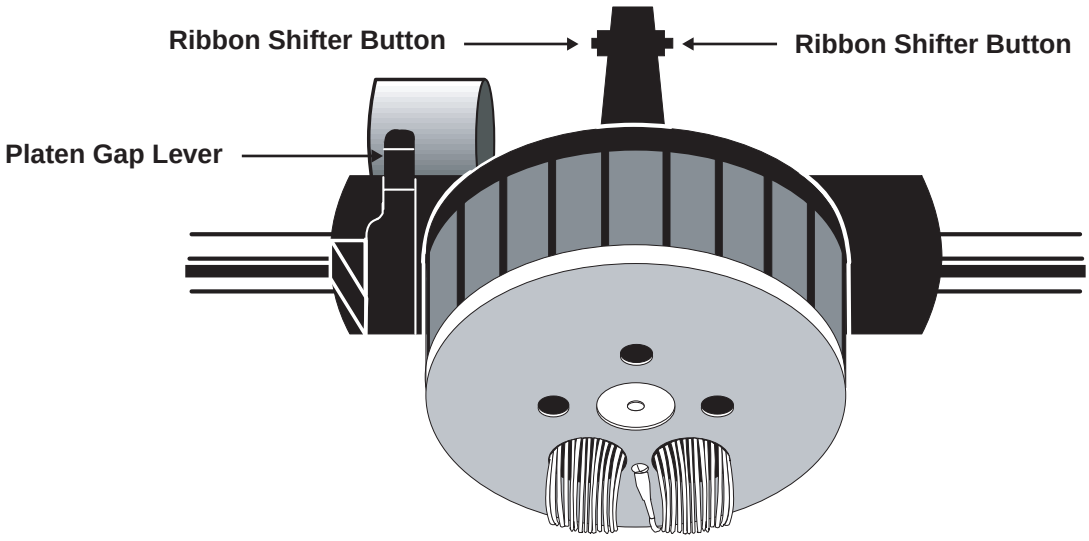


Figure 2-4. Platen Gap Lever

5. If you are replacing the ribbon cartridge, grasp both sides of the ribbon shifter guide, as illustrated in Figure 2-5, and gently bend the sides toward the rear of the printer. The ribbon shifter guide will disengage. Lift it away from the printer.

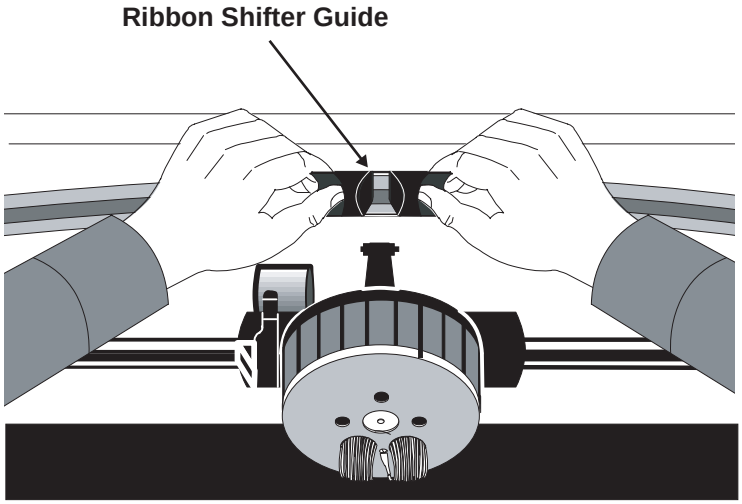


Figure 2-5. Disengaging the Ribbon Shifter Guide

6. If you are replacing the ribbon cartridge, lift out the old cartridge and remove the plastic corner guides. Reinstall the new corner guides (they are packed in the new ribbon cartridge package) over the corner guide brackets.
7. Snap the new ribbon cartridge into place. Make sure that the tabs on the front and back of the cartridge snap into the slots on the ribbon cartridge bracket.
8. Pull the ribbon stop out of the cartridge and put the stop aside for later use.
9. Install the ribbon shifter guide by positioning it above the nose of the print head, then press the guide down until it rocks into place on the ribbon shifter buttons. If the ribbon shifter guide is properly installed, it will rotate smoothly.

Caution

Make sure that the barrel fits snugly against the print head nosepiece. Otherwise, it will not shift properly.

10. Use the tapered end of the ribbon stop to route the ribbon around the right and left corner guides.
11. Turn the ribbon drive gear knob counterclockwise several times to make sure the ribbon is feeding properly.
12. Slide the print head to the far left and reset the platen gap lever to the appropriate position to accommodate the thickness of the forms. If necessary, refer to “Setting the Platen Gap Lever” later in this chapter. Close the printer cover.

Caution

If the platen gap adjustment is set too close to the paper, the life of the print head will be reduced and the print head may be damaged.

13. Connect the printer to a power source, as explained later in this chapter.

Installing a Nonshifting Ribbon

Follow these steps to install or replace a Nonshifting ribbon cartridge. Refer to Figure 2-6. Note that the Nonshifting ribbon is monochrome only.

1. Turn the printer off and unplug the power cord from the outlet.
2. Raise the printer cover.
3. Set the platen gap lever away from the platen (toward you) as far as it will go (see Figure 2-4).

Warning

The print head may be hot. To move it, grasp the print head drive belt.

4. Slide the print head to the middle of the printer.
5. Grasp the ribbon guide, as illustrated in Figure 2-6, and lift it from the print head.

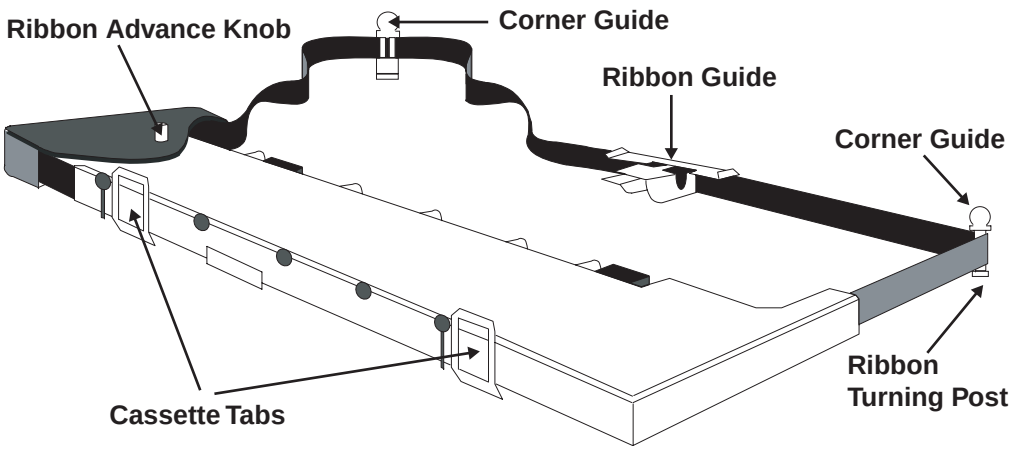


Figure 2-6. Nonshifting Ribbon Cartridge

6. Remove the used corner guides. The new corner guides are attached to the new ribbon. (On Shifting ribbons, the corner guides are separate.)
7. Release the left end of the cartridge first. Push back the metal spring clip on the printer, and squeeze the cassette tabs. Lift the left end of the cartridge clear, then push the metal spring clip forward to release the right end.
8. Pull the ribbon guide from the body of the new cartridge and make sure the ribbon is not twisted.
9. Seat the cartridge onto the platform. Press down along the top of the cartridge to ensure that it is firmly seated, with the cassette tabs snapped into the openings in the platform.
10. Slide the plastic corner guides onto the ribbon turning posts while making sure the ribbon is not twisted. Make sure that the corner guides are pressed all the way down.

11. Snap the ribbon guide onto the print head. The ribbon guide must fit securely on the ribbon shifter buttons shown in Figure 2-4. Make sure the ribbon is not twisted.
12. Take up the ribbon slack by turning the ribbon advance knob in the direction of the arrow.

Caution

If the platen gap adjustment is set too close to the paper, the life of the print head will be reduced and the print head may be damaged.

13. Close the printer cover.
14. Connect the printer to a power source, as explained in the next section.

Connecting the Printer to a Power Source

Avoid connecting the 1330 to a power source shared by devices such as motors or fans that may cause low fluctuating voltage or that may introduce noise into the power supply. Unstable voltage can cause the printer to operate erratically.

Uncoil the AC power cord. Plug the socket end of the power cord into the receptacle on the back of the 1330 (see Figure 2-7), then plug the connector end of the power cord into the proper AC outlet.

Power Cable Requirements

For operation at 100-120V: The power cable required for domestic units is a UL listed, CSA certified, 18/3 AWG, type SVT or SJT cable (15-foot [4.6-meter] maximum). It is terminated on one end by a 125V, 15A grounding type attachment connector. It is terminated at the other end by a 125V, 15A parallel blade, grounding type attachment plug.

For operation at 200-240V: The power cable required for domestic units is a UL listed, CSA certified, 18/3 AWG, type SVT or SJT cable (15-foot [4.6-meter] maximum). It is terminated on one end by a 250V, 15A grounding type attachment plug body. It is terminated at the other end by a 250V, 15A tandem blade, grounding type attachment connector.

The power cable required for international units is an 18/3 AWG, type SJT cable (15-foot [4.6-meter] maximum). It is terminated on one end by a 250V, 15A grounding type attachment plug body. It is terminated at the other end by a 250V, 15A grounding type cord connector. The cord set is marked HAR to signify appropriate safety approvals.

The installation site must provide a properly wired and grounded power outlet. Circuits connected to air conditioners and devices that generate significant transient electrical noise should be avoided.

Electrostatic discharge in the vicinity of the unit should be minimized by avoiding high resistance floor material and carpeting that does not have antistatic properties, avoiding the use of plastic seats and covers, and avoiding low humidity levels. The unit should be located away from areas that generate electromagnetic interference (for example,

transformers, power distribution panels, and motors). The unit should not be installed where the atmosphere contains corrosive elements that may damage the unit.

Cable runs should avoid areas that produce electromagnetic interference (for example, near transformers, switching equipment, power distribution panels, and under carpets where vacuum cleaning is done). Also, heavy equipment should not be moved or rolled over the cable.

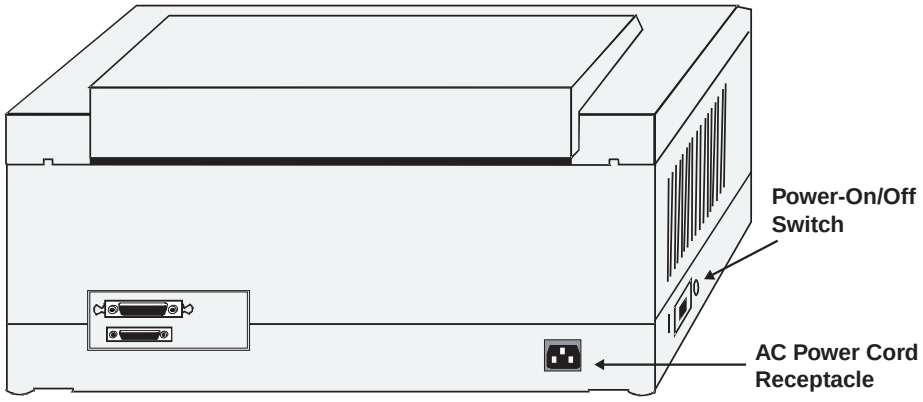


Figure 2-7. Installing the AC Power Cord

After installing the ribbon cartridge and connecting the 1330 to a power source, you are ready to connect the coax cable.

Connecting the Coax Cable

Before you connect the coax data cable, make sure the Power switch is in the **O** (OFF) position.

Route the coax cable to the coax connector receptacle on the back of the 1330. See Figure 2-8. Plug the cable connector into the receptacle and turn the connector clockwise until the slots on the side of the connector lock against the studs on the side of the receptacle.

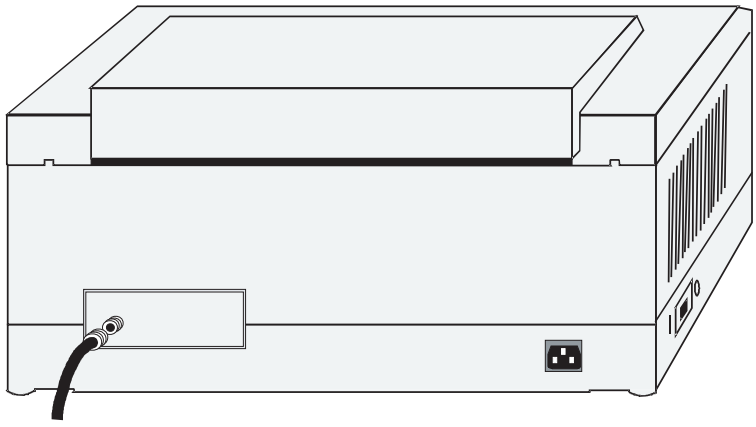


Figure 2-8. Connecting the Coax Cable

Connecting a Parallel or Serial Cable

To comply with FCC regulations, use one of the following cables:

- Parallel cable – MTX P/N 956588-001 (36-pin, 6 ft. EIA).
- RS-232 serial cable – This is available as P/N 957520-010 (10 feet). For other RS-232 or RS-422 applications, use locally available cables.

Before you connect the cable, make sure the Power switch is in the O (OFF) position.

Connecting a Parallel Cable

Push the male end of the parallel cable into the parallel receptacle on the back of the 1330 (see Figure 2-9). Push the wire guards, located at each end of the receptacle, in, over the cable end, to hold the cable in place.

Connecting a Serial Cable

Loosen the screws at each end of the serial receptacle on the back of the 1330 (see Figure 2-9). Push the male end of the serial cable into the serial receptacle. Tighten the screws to hold the cable in place.

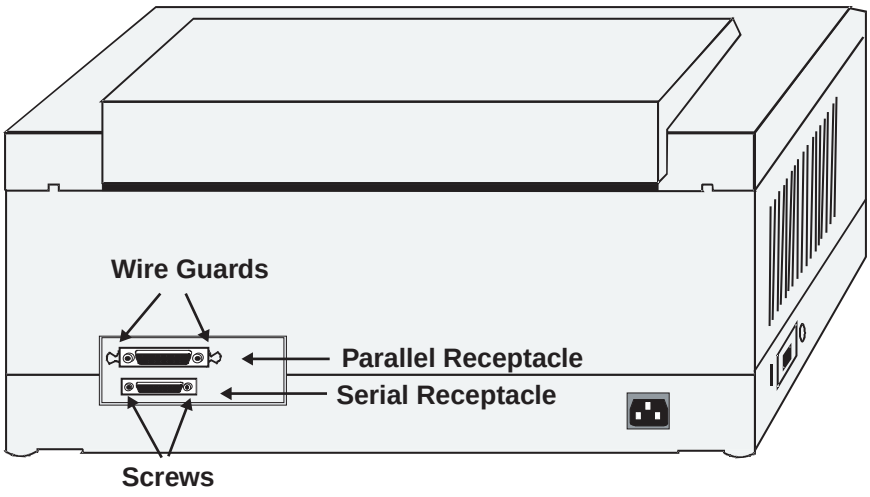


Figure 2-9. Connecting a Parallel or Serial Cable

Powering on the 1330

Turn the printer on by setting the Power switch to the | (ON) position (see Figure 2-7).

When the printer is powered on, BASIC ASSURANCE TEST IN PROGRESS will appear in the display window. The Basic Assurance Test (BAT) tests various components of the 1330 and ensures that the printer is ready for operation. The current status of the test in progress is displayed in the bottom row. If an error condition is encountered during the BAT, the BAT will halt and the error message will be displayed. For a list of error messages and recovery procedures, refer to Appendix A of this manual.

Note: If you have been following the procedures for printer installation as presented in this chapter, the display will indicate that there is no paper in the printer. Continue to follow these procedures.

When the BAT is completed successfully (within a few seconds), the READY message will appear in the display window. In 3270 mode, if communications have been established with the host system, Cu will display. If communications have not been established with the host, the display will read READY, and Cu will disappear in about 30 seconds.

The next step is to check your forms against the 1330 forms specifications.

Forms Specifications

Before installing the forms, you should review the forms you intend to use to make sure they meet 1330 specifications. Figures 2-10 through 2-13 show these specifications. Specifications are given for the two types of form feed mechanism available for the 1330, the Continuous Forms module and the Forms Handler module (with both the Document on Demand [DOD] option and Document Insertion Device [DID] option).

	Continuous Forms Module	DOD Option	DID Option
Module Type	A	B	B
Type of Forms	Continuous	Continuous	Single
Length			
Maximum	14.0 in 35.6 cm	14.0 in 35.6 cm	14.0 in 35.6 cm
Minimum	3.0 in 7.6 cm	3.0 in 7.6 cm	7.5 in 19.0 cm
Width			
Maximum	15.0 in 38.1 cm	15.0 in 38.1 cm	15.0 in 38.1 cm
Minimum	3.0 in 7.6 cm	3.0 in 7.6 cm	3.0 in 7.6 cm
Forms Thickness			
Single Part			
Maximum	0.006 in 0.15 mm	0.006 in 0.15 mm	0.006 in 0.15 mm
Minimum	0.003 in 0.08 mm	0.003 in 0.08 mm	0.003 in 0.08 mm
Multipart			
Maximum Allowable	0.025 in 0.64 mm	0.025 in 0.64 mm	0.025 in 0.64 mm
Maximum Recommended	0.018 in 0.46 mm	0.018 in 0.46 mm	0.018 in 0.46 mm
Each Sheet in Multipart			
Maximum	0.006 in 0.15 mm	0.006 in 0.15 mm	0.006 in 0.15 mm
Minimum	0.002 in 0.05 mm	0.002 in 0.05 mm	0.002 in 0.05 mm
Multiple Parts			
Maximum Allowable*	6	6	6
Maximum Recommended	4	4	1
Weight*			
Single Part			
Maximum**	40 lb	40 lb	40 lb
Minimum	15 lb	15 lb	15 lb
Each Sheet in Multipart			
Maximum**	40 lb	40 lb	40 lb
Minimum	12 lb	12 lb	12 lb

*Specifications are applicable in coordination with forms thickness specifications.
**Forms should be tested by the customer for acceptability.

Figure 2-10. Forms Specifications - Physical Requirements

	Continuous Forms Module	DOD Option	DID Option
Forms Width (A)			
Maximum	15.0 in 38.1 cm	15.0 in 38.1 cm	15.0 in 38.1 cm
Minimum	3.0 in 7.6 cm	3.0 in 7.6 cm	3.0 in 7.6 cm
Forms Length (B)			
Maximum	14.0 in 35.6 cm	14.0 in 35.6 cm	14.0 in 35.6 cm
Minimum	3.0 in 7.6 cm	3.0 in 7.6 cm	7.5 in 19.0 cm
First Print Position (C)			
Maximum	0.65 in 1.7 cm	0.65 in 1.7 cm	0.65 in 1.7 cm
Minimum	0.15 in 0.38 cm	0.15 in 0.38 cm	0.15 in 0.38 cm
Last Print Position (D)			
Minimum	0.25 in 0.64 cm	0.25 in 0.64 cm	0.25 in 0.64 cm
First Print Line (E)	0.250 in 0.64 cm	0.625 in 1.59 cm	0.500 in 1.27 cm
Last Print Line (F)	0.25 in 0.64 cm	0.25 in 0.64 cm	0.25 in 0.64 cm

Figure 2-11. Forms Specifications - Print Positioning

Refer to Figures 2-12 and 2-14 for an explanation of the meaning of the letters A through F.

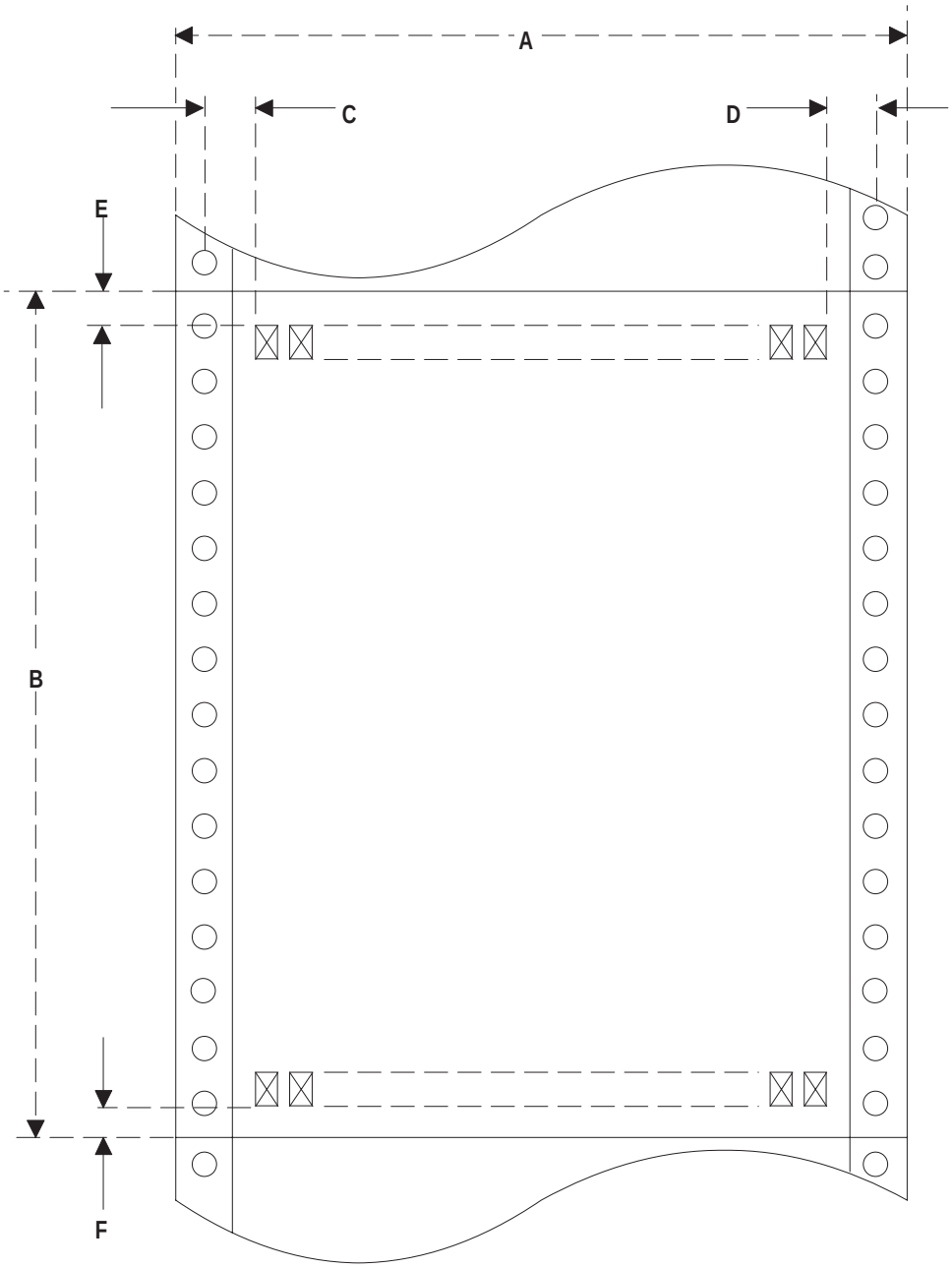


Figure 2-12. Print Positioning - Continuous Forms

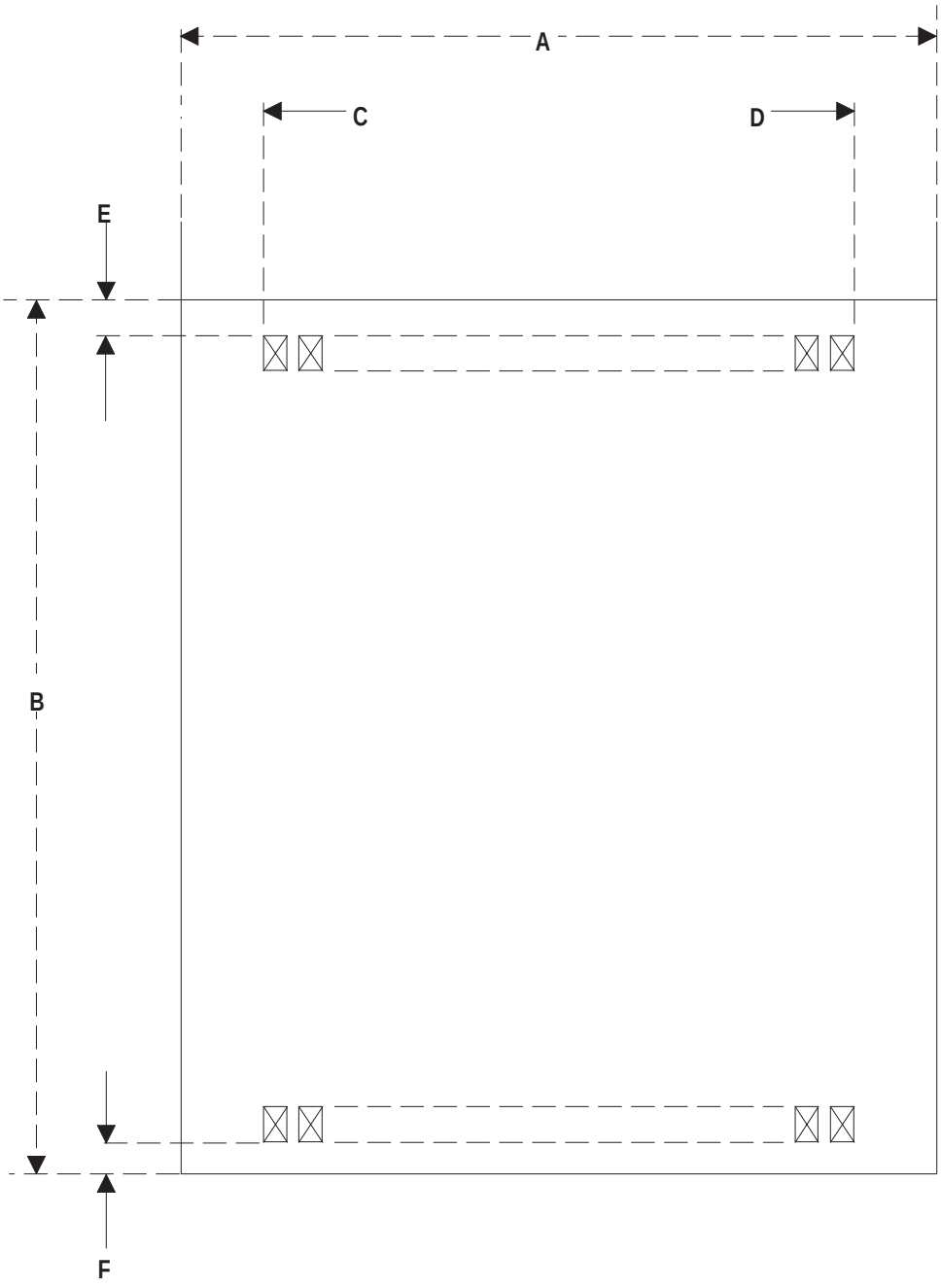


Figure 2-13. Print Positioning - Single Part Forms

Review the following points carefully to ensure that your forms are appropriate for use in the 1330.

1. Except for horizontal dimensions of the first print position specified in Figures 2-12 and 2-13, no printing should occur within 0.25 inch (0.6 cm) of any edge, perforation, or fold.
2. Printing must not occur across any holes, perforations, or edges of the forms, nor should printing occur directly on the platen.
3. Continuous card stock forms are not recommended.
4. Narrow width forms (less than 8.0 inches [20.3 cm]) contribute to instability of stacking and may require operator attention. Wider base forms are recommended.
5. The minimum single part forms thickness is 0.003 inch (0.08 mm). The maximum single part forms thickness is 0.006 inch (0.15 mm).
6. The maximum allowable multiple part forms thickness is 0.025 inch (0.64 mm). The maximum recommended multipart forms thickness is 0.018 inch (0.46 mm). The minimum thickness for any sheet in multipart forms is 0.002 inch (0.05 mm) (carbon excluded). The maximum thickness for any sheet in multipart forms is 0.006 inch (0.15 mm).
7. Up to six-part continuous part forms (original plus five copies) can be used. However, for optimum feeding, registration, and print quality, a maximum of four parts is recommended. *All* multipart forms should be tested by the customer prior to use for satisfactory feeding, registration, and print quality.
8. Carbon forms are recommended for multipart continuous forms. Carbonless (ink impregnated) forms can be used but may result in less legible print than carbon paper.
9. No hard or metallic fasteners are permitted.
10. Gluing is the recommended method of fastening forms. The gluing must be adequate to prevent separation or shifting of the forms as they are fed through the printer.
11. Crimping is not recommended. However, if crimping is used, the crimps must be located no more than 2 inches (5.1 cm) apart along the margins of the forms length.
12. Partial forms separation is not permitted.
13. Translucent or thin forms may cause the paper motion detector to give false readings. The paper motion detector can be disabled, if required, to allow the use of these forms (see Chapter 4).

Next is the procedure for using the Continuous Forms module.

Installing the Forms – Continuous Forms Module

Forms are fed into the 1330 through the slot in the front of the printer, and exit out the rear slot in the top, as illustrated in Figure 2-14.

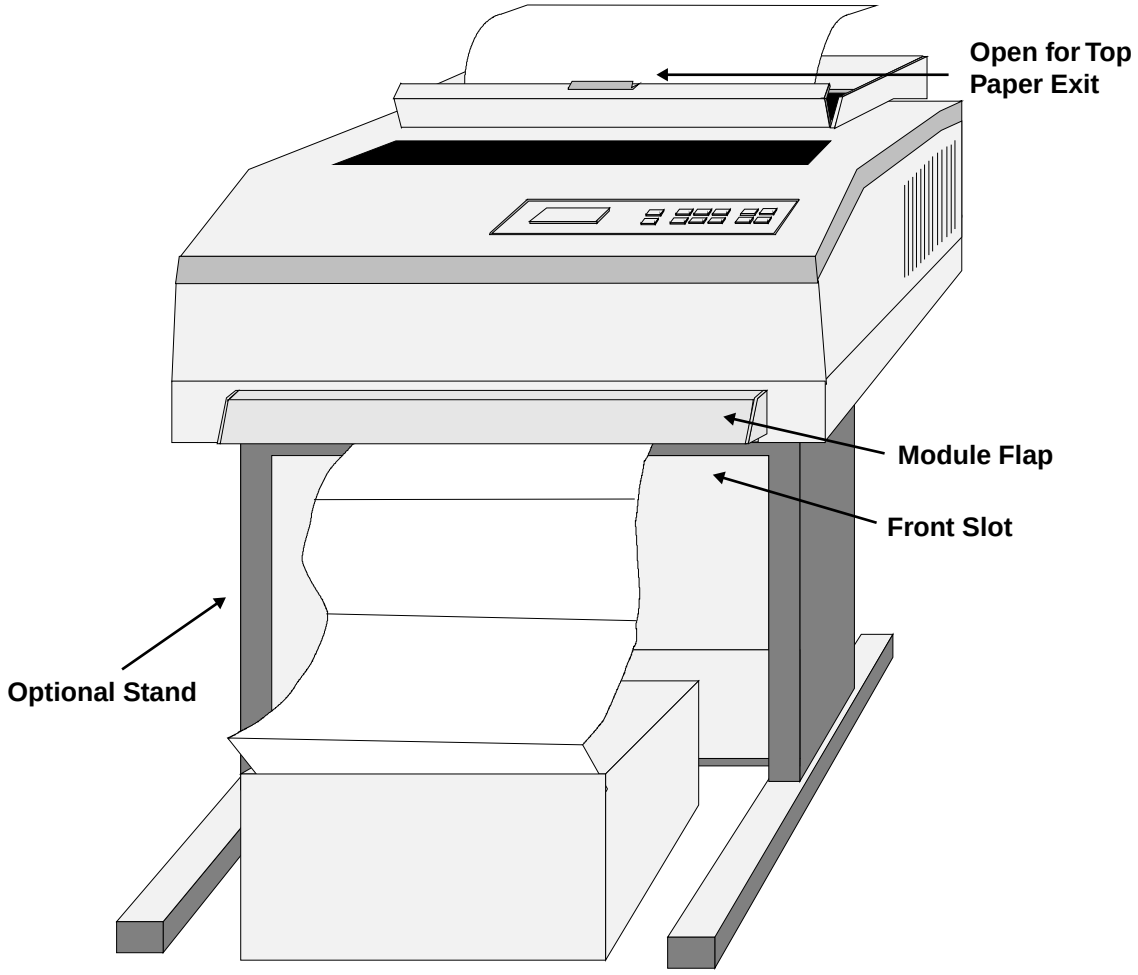


Figure 2-14. Paper Feed Slots

To install the forms, follow these steps:

1. If the printer is powered on, press the Stop key to place the 1330 in Stop mode.
2. Raise the printer cover.
3. Open the tractor doors. Refer to Figure 2-15. If you are reloading paper, remove any paper remaining in the printer.

   To remove paper, pull the pinfeed holes on the sides of the paper away from the tractor pins, tear off the paper *above* the tractors, and gently tug the paper a few inches from where it enters the printer.

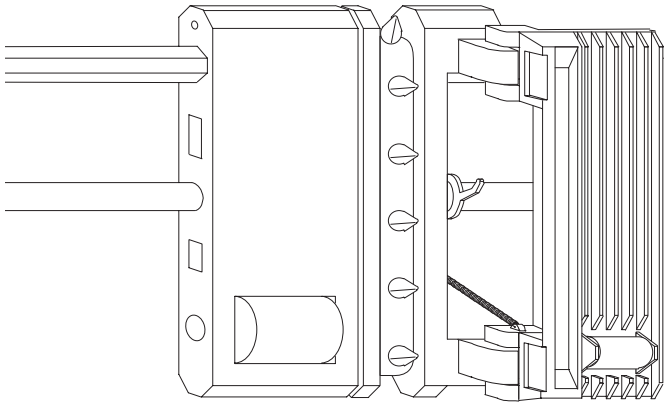


Figure 2-15. Open Tractor Door

4. If the right forms tractor has not been adjusted for the paper width, loosen the tractor by flipping the lever up, as illustrated in Figure 2-16. (Note that the left tractor cannot be adjusted.)

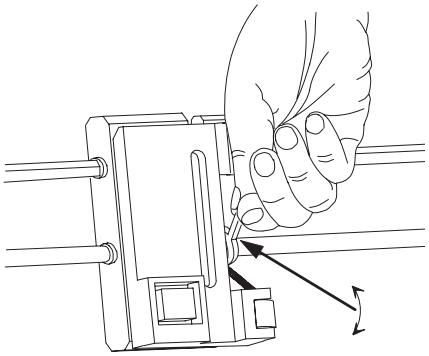


Figure 2-16. Flipping the Tractor Lever

5. Insert the paper through the front slot (see Figure 2-17). Continue hand feeding the paper until the top of the paper appears flush with the top of the tractors.
6. Move the platen gap lever (Figure 2-18) toward you until it is completely open.

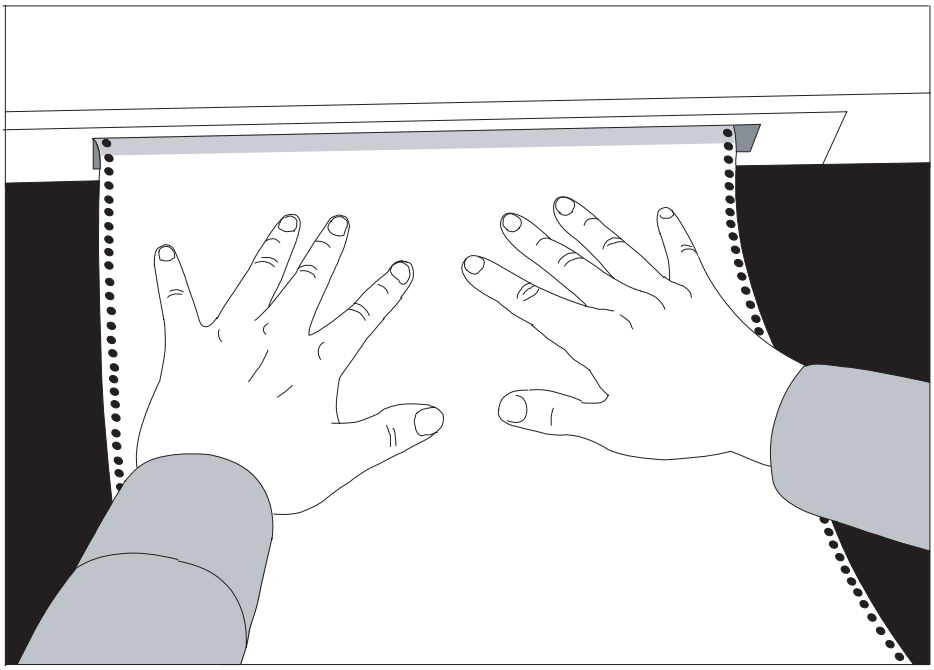


Figure 2-17. Inserting Paper - Continuous Forms Module

7. Raise the module flap and position the paper so the pinfeed holes along the edge of the paper fit evenly over the tractor pins. Slide the tractor, if necessary, to adjust for the paper width.
8. When there is no slack in the paper, and it is aligned evenly, close the tractor doors.
9. Flip the tractor lever down to lock it in place, referring to Figure 2-16.
10. Before you close the printer cover, set the platen gap lever as explained in the next section.
11. Close the printer cover and lower the module flap.

Note: Whenever you close the printer cover, be sure to take hold of any forms that have exited through the top slot, to prevent the forms from jamming up inside the printer.

12. Press the Start key to enable printing.

Setting the Platen Gap Lever

The platen gap lever, located on the carriage to the left of the print head (see Figure 2-18), should be set according to the thickness of the forms being used.

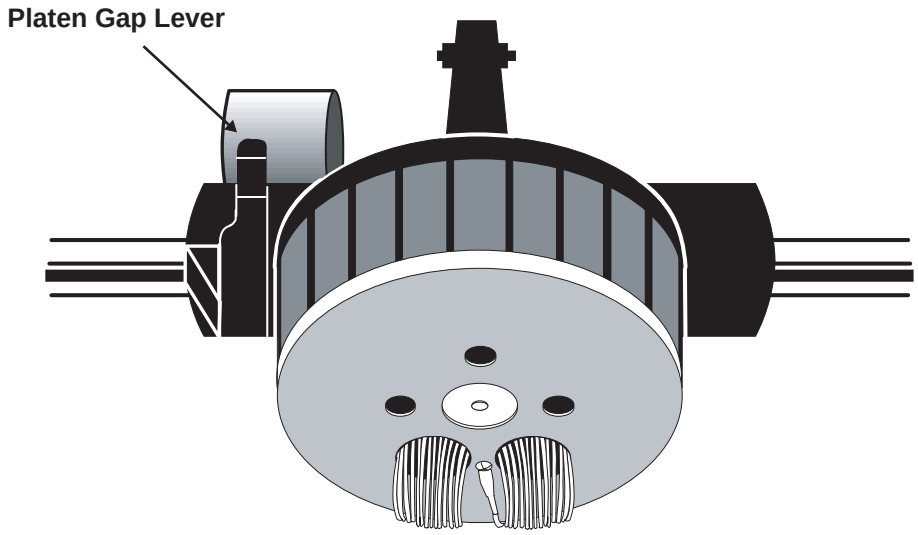


Figure 2-18. Platen Gap Lever

To maximize print head life and performance, follow these instructions for setting the platen gap lever when you reload forms:

For Single Part Forms

1. Set the platen gap lever away from the platen (toward you) as far as possible while maintaining good print quality.
2. When printing becomes light with a fresh ribbon, or characters are formed incompletely, move the lever toward the platen one increment (one click).
3. If the print quality is not acceptable after you adjust the platen gap lever, refer to "Checking Character Width and Print Registration" in Chapter 7 of this manual.

Caution

If the platen gap lever is set too close to the paper, the life of the print head will be reduced and the print head may be damaged.

For Multipart Forms

1. Set the platen gap lever away from the platen (toward you) as far as possible while maintaining good print quality. Make sure the quality is good on the last part.
2. When printing becomes light with a fresh ribbon, or characters are formed incompletely, move the lever toward the platen one increment (one click).

3. If the print quality is not acceptable after you adjust the platen gap lever, refer to "Checking Character Width and Print Registration" in Chapter 7.

Caution

If the platen gap lever is set too close to the paper, the life of the print head will be reduced and the print head may be damaged. The platen gap lever must be far enough from the platen to allow the shifter nosepiece to rotate smoothly, and to ensure that the forms are not smudged by the ribbon.

Installing the Forms Handler Module

This section explains how to install the Forms Handler module using the Document on Demand (DOD) option and the Document Insertion Device (DID) option.

Installing Forms Using the DOD Option

Refer to Figure 2-19 for a picture of the Forms Handler module set for the DOD option. In this procedure, you will first load paper into the module, then put the module into the 1330.

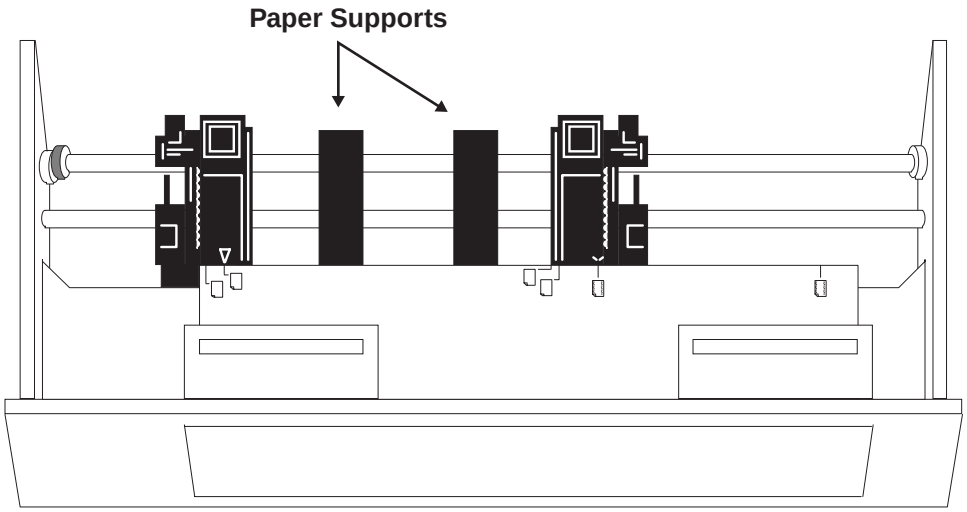


Figure 2-19. Forms Handler Module (DOD Option)

1. Make sure the printer power is on, and the printer is in Stop mode. If necessary, press the Stop key.
2. For ease of handling, lay the module on the top of the printer.
3. Unlock the left forms tractor of the module.
4. Slide the left forms tractor to the *right,* as far as it will go.
5. Lock the left tractor.
6. Unlock the right forms tractor on the module.

7. Move the right tractor to the approximate width of the forms you plan to use. Note that three standard widths for computer pinfeed paper – 8 1/4 inches (21.0 cm), 9 1/2 inches (24.1 cm), and 14 7/8 inches (37.8 cm) – are marked on the module.
8. Center the paper supports (Figure 2-19) an equal distance from the tractors and from each other. For narrow forms, you can snap out the paper supports.
9. Open the doors of both forms tractors.
10. Insert the paper into the front of the module, placing the paper on the tractor pins. Make sure that the paper does not extend beyond the pins.
11. Move the right tractor as necessary to get correct paper tension.
12. Close the tractor doors.
13. Lock the right forms tractor.
14. Insert the module into the front of the printer until it snaps firmly in place. The display window will show DOD.
15. Open the printer cover.
16. Move the platen gap lever toward you until it is completely open.
17. Close the printer cover.
18. Press the Load/Eject key to advance the forms to the top of form position.
19. Open the printer cover.
20. Adjust the setting of the platen gap lever, as necessary. Move the lever to a lower setting (toward the platen) for darker print; move the lever to a higher setting (toward you) for lighter print. If you are using multipart forms, make sure that the last copy is legible without any smudging on any other copy. If the last copy is too light, move the lever to a lower setting. If the last copy is all right, but other copies are smudging, move the lever to a higher setting. Note that moving the lever will affect print head life.
21. Unlock the 1330 right forms tractor.
22. Position the right tractor for the width of the forms. The arrow on the bottom of the tractor should point to the right edge of the forms.

Note: The edge of the forms should cover the roller in the tractor body, but should not engage the tractor pins.

23. Lock the right tractor.
24. Close the printer cover.
25. Press the Load/Eject key to advance the forms to the tear off position at the tear bar. If the forms are not in the correct position, adjust the position by using Configuration Option 411. Refer to Chapter 4 or Chapter 5 for instructions.
26. Press the Load/Eject key to move the forms back to the first print line.

Note: If your Forms Handler module is equipped with the roller drive option, move both of the white slide bars on the tractors to the left to disengage the roller

drive. The bars will snap into the OFF position, as shown in Figure 2-20.

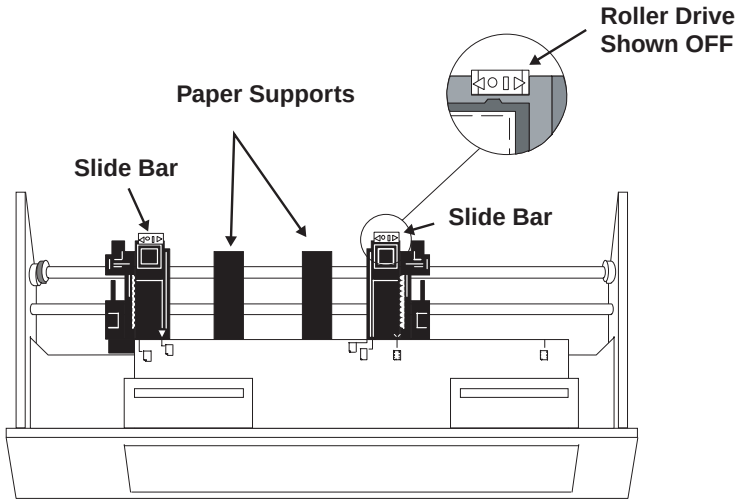


Figure 2-20. DOD Option with Roller Drive

Next is the procedure for using the Document Insertion Device (DID) option.

Installing Forms Using the DID Option

Refer to Figure 2-21 for a picture of the Forms Handler module set for the DID option. In this procedure, first set up the module for forms loading, next insert the module into the printer, and finally load the forms into the printer.

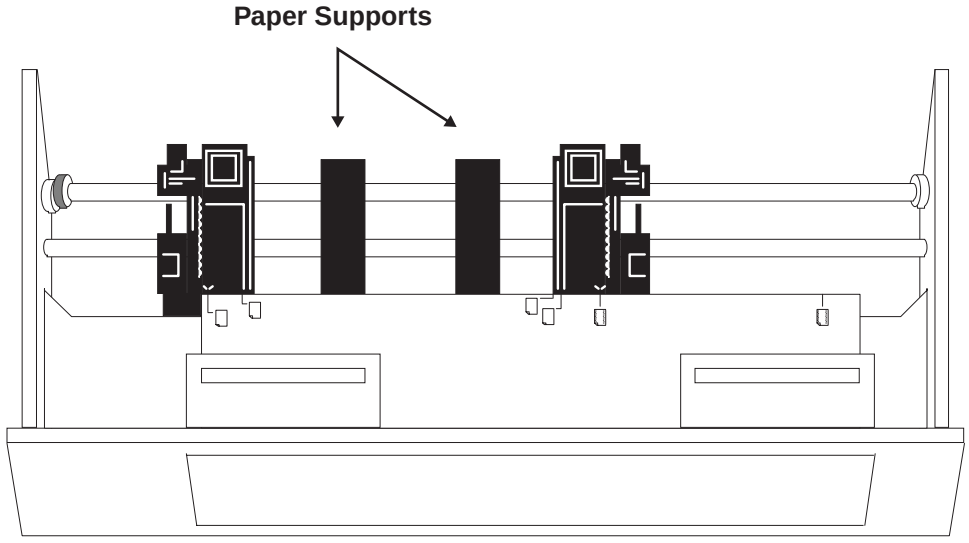


Figure 2-21. Forms Handler Module (DID Option)

1. Make sure the printer power is on, and the printer is in Stop mode.
2. For ease of handling, lay the module on top of the printer.

3. Unlock the left forms tractor of the module.
4. Slide the left forms tractor to the *left*, as far as it will go.
5. Lock the left tractor.
6. Unlock the right forms tractor on the module.
7. Insert a sample of the forms you plan to use into the module slot, making sure that the left edge of the forms is in contact with the left inside edge of the module.
8. Move the right tractor so that the arrow on the bottom of the tractor points to the right edge of the forms. Note that two standard widths for sheet feed paper – 8 1/4 inches (21.0 cm) and 8 1/2 inches (21.6 cm) – are marked on the module.
9. Lock the right tractor.
10. Center the paper supports (Figure 2-22) an equal distance from the tractors and from each other. For narrow forms, snap out the paper supports.
11. Remove the sample forms.
12. Insert the module into the front of the printer. The display window will read DID.
13. Place the forms in the module (see (Figure 2-22) Use the left edge of the module to help feed the forms in straight. Insert the forms until the top edge contacts both the right and left feed rollers.

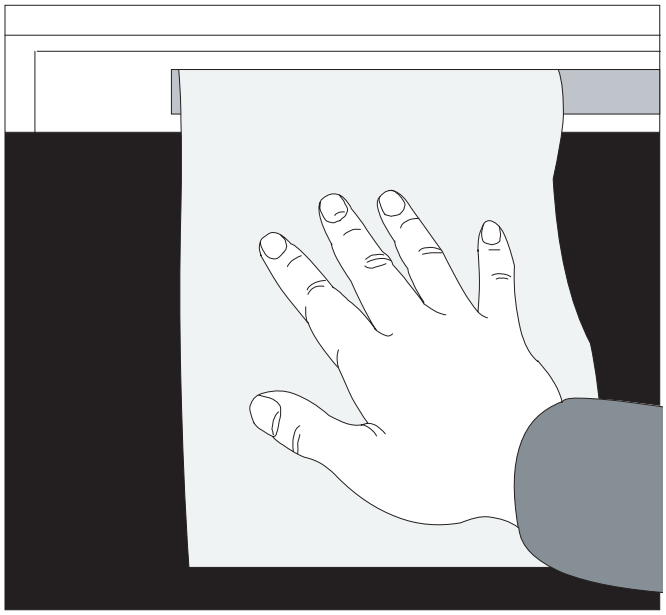


Figure 2-22. Inserting Paper - Forms Handler Module

14. While holding the forms lightly, press the Load/Eject key to move the forms to the top of form position. Release the forms as the printer slowly advances them.

Note: If the forms are skewed, the printer will reject them, and the message 04 PAPER SKEW will be displayed. Go back to Step 13.

15. Open the printer cover.
16. Adjust the setting of the platen gap lever, as necessary. Move the lever to a lower setting (toward the platen) for darker print; move the lever to a higher setting (toward you) for lighter print. If you are using multipart forms, make sure that the last copy is legible without any smudging on any other copy. If the last copy is too light, move the lever to a lower setting. If the last copy is all right, but other copies are smudging, move the lever to a higher setting. Note that moving the lever will affect print head life.
17. Unlock the 1330 right forms tractor.
18. Position the right tractor for the width of the forms. The arrow on the bottom of the tractor should point to the right edge of the forms.
19. Lock the right tractor.
20. Close the printer cover.
21. Press the Start key to enable printing.

Note: If your Forms Handler module is equipped with the roller drive option, move both of the white slide bars on the tractors to the right to engage the DID roller drive. The bars will snap into position, and their right sides will extend beyond the edges in the ON position, as shown in Figure 2-23.

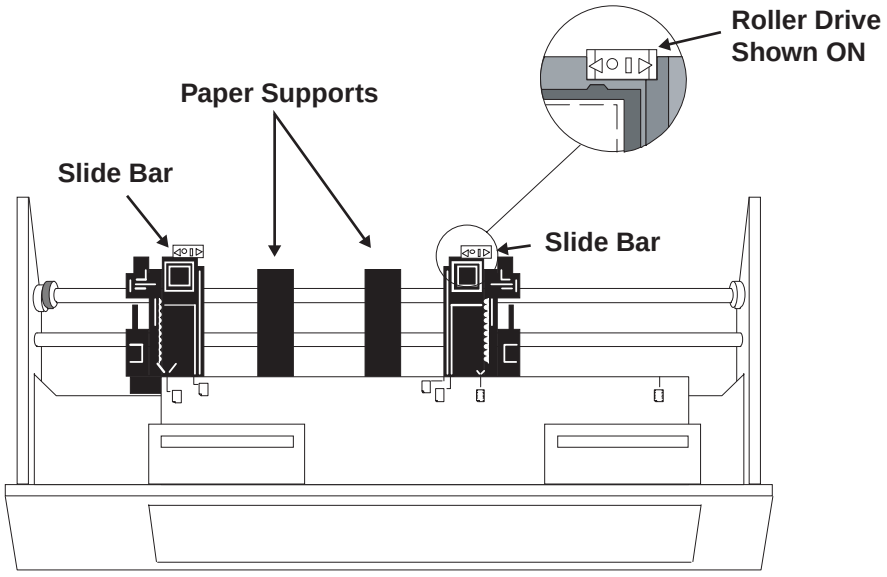


Figure 2-23. DID Option with Roller Drive

The installation of the 1330 is now complete, and the printer is ready to print.

Before the 1330 can begin normal operations, it must be configured with the features and identification information appropriate for your system. The configuration process is discussed in Chapter 4 and Chapter 5. Before you configure the 1330, you should be familiar with the operator control panel and the display window messages, which are explained in Chapter 3.

Chapter 3. Operator Control Panel

The 1330 Operator Control Panel, located on the front of the printer, consists of the status display window and the keypad. The status display monitors printer operations, and the keypad is used to start and control operator functions. See Figure 3-1.

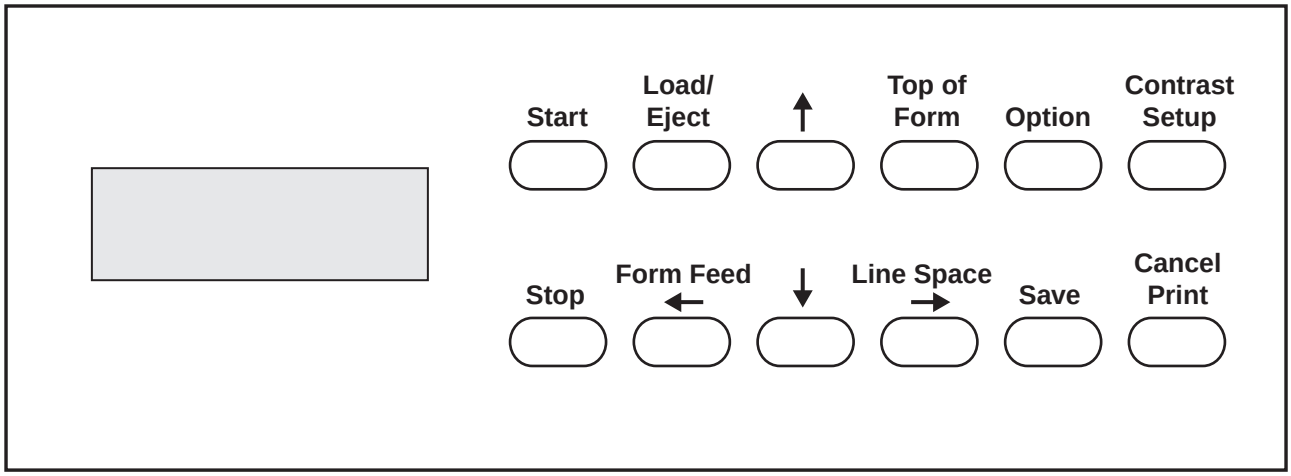


Figure 3-1. 1330 Operator Control Panel

The Status Display

The 80-character status display window, located on the left side of the operator control panel, indicates the operating mode, the printing formats, and other conditions on the 1330. Several of these messages are explained below. (See Figure 3-2 for status display layout.) Messages that appear during print format operations and configuration are discussed in Chapters 4 and 5.

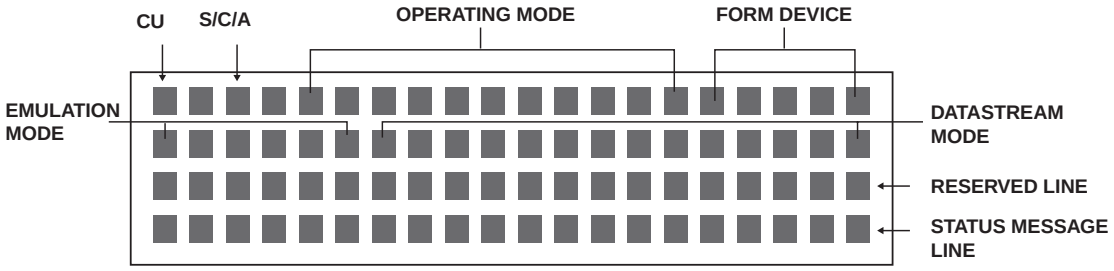


Figure 3-2. Status Display

Cu

In 3270 mode or share mode, the Cu signal displays when the 1330 is in communication with the controller. If the printer is receiving data, the Cu signal will blink.

S/C/A

The one-letter display indicates the current interface mode the printer is configured with. The valid displays for the interface option are “S” (share), “C” (3270), and “A” (ASCII).

Operating Mode

The 1330 has four types of operation modes: Start, Stop, Menu, and Contrast.

When the 1330 is in Start mode and ready to receive data, the READY message appears in the status window.

When the printer is in Stop mode and awaiting an operator-initiated function, the STOP message appears in the status window. If the printer is left in Stop mode for more than 10 minutes, either a status message is displayed in the window or the printer returns to Start mode, depending on how you have configured the printer.

When the operator is configuring the printer using the front panel option, the printer is in Menu mode. (See Chapter 4 for displays under the Menu mode.)

When the operator is adjusting the darkness of the print using the Contrast key, the printer is in Contrast mode. (See Chapter 6 for displays under the Contrast mode.)

Please note that no printing takes place in Stop mode other than operator print. Data received from the controller will be printed only when the printer is in Ready mode.

Form Device

The form module installed with the printer will be displayed when the printer is configured to sense the module. If you are using an overwrite feature in the configuration option, the display will show the overwrite value. The form devices available for the 1330 are “CFD” (continuous forms device), “DOD” (document on demand), and “DID” (document insertion device).

Emulation Mode

The current printer emulation modes will be displayed in this location. The available emulation modes for 3270 are “4230,” “4224,” “3268,” and “2124.” The available emulation modes for ASCII are Proprinter and TI-810.

Datastream Mode/Interface Type

When host data is being processed, the type of datastream will be displayed in this location. The acceptable datastreams are LU1 (SCS), LU3 (DSC/DSE), LU1-IPDS, and LU3-IPDS. In ASCII, the interface type will be displayed. Those types can be parallel, RS-232, RS-422, or ASC.

Status Message

The 1330 displays the current printer status in this location. When the 1330 is operated under normal conditions, no message should be displayed. If an error is detected by the printer, for example a paper jam, the printer will display PAPER JAM on the status line. If more than one error is detected at the same time, only the most serious one will be displayed on the status line. Once the problem is corrected, the status line will clear or the next error message, if any, will be displayed.

The Keypad

The 1330 keypad, located on the right side of the operator control panel, works on a pressure sensitive principle. When you press a key, a switch is activated that changes the state or mode of the printer.

When you press an invalid keypad key, the printer will beep if the alarm is activated. The alarm can be enabled or disabled during configuration. For instructions on how to configure the alarm in 3270 mode, see Chapter 4, Configuration Options 402 and 403; for ASCII mode, see Chapter 5, Configuration Options 402 and 403.

Key Functions

Start

The Start key puts the 1330 in Ready mode if the printer is not in Menu mode. If the system is sending data to be printed, and no error conditions appear in the display, this key starts the printer printing. This key also stops the printer alarm. If the 1330 is in Stop mode with the forms ejected in DOD mode, this key will not function until you put the form back to the normal condition by pressing the Load/Eject key. If the 1330 is in Menu mode, the Start key will select the current option for configuration.

Stop

The Stop key puts the printer in Stop mode when the printer is in Ready or Menu mode. When running an operator test, the Stop key stops any test after the current line is finished. In Menu mode, the Stop key also serves as a return from an option to the menu list.

The Stop key also stops the printer alarm, and clears any displayed error conditions, provided they no longer exist. For example, in DOD mode, if the form is ejected and the cover is opened, the COVER OPEN message will display. Pressing the Stop key in Stop mode after the cover is closed will clear the previous COVER OPEN message and put the original FORMS EJECTED message in the status window.

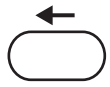
Load/ Eject

With the Document Insertion Device, pressing the Load/Eject key at initial load will advance the paper to the current position on the form. Pressing the key again will eject the paper.

With the Document on Demand device, pressing the Load/Eject key in Ready mode for initial load will advance the paper to the first print line. Pressing the key a second time will advance the paper to the tear line and put the printer in Stop mode so that you can tear the paper off using the tear bar. The status window will display the message FORMS EJECTED. Pressing the Load/Eject key a third time with the form ejected will clear this message from the display and will move the paper back to the current position on the form.

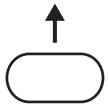
The Load/Eject key will work in both Start and Stop modes with the Forms Handler module. With the Continuous Forms Module, if the paper is out, you can press the Load/ Eject key in Stop mode to eject the last sheet of paper.

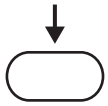
Form Feed



The Form Feed key (which shares the key with Left Arrow) advances the forms so that the next form is positioned at the top of form. This function is used only with continuous forms and the Document on Demand option. Form feed is active only in Stop mode.

In Menu mode, the Left Arrow key scrolls through the available options or tests under the current menu. After selecting an option, the Left Arrow key scrolls through the available values of that option. The Left Arrow keys is also used to adjust the darkness of the print in Contrast mode.





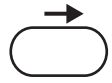
The Up and Down Arrow keys, in Stop mode, move the forms 0.007 inch (0.18 mm) in the direction of the arrow each time the key is pressed. If the Up Arrow key is held, the forms move continuously until the key is released. In Menu mode, the Up and Down Arrow keys are used to scroll through the menu list. The Up Arrow moves forward through the menu, and the Down Arrow moves backward through the menu.

Note: If the Continuous Forms module is installed, do not use the Down Arrow key for continuous forms movement. The forms may become misaligned.

Top of Form

The Top of Form key sets the current position as the first print line on the forms. With the Document Insertion Device installed and paper not loaded, this key will also cause the next sheet loaded to begin printing at the first print line. This key is active only in Stop mode.

Line Space



The Line Space key (which shares the key with Right Arrow) advances the forms upward one line. If this key is held for more than 0.5 second, the forms will continue to move forward until the key is released. The Line Space key is active only in Stop mode.

In Menu mode, the Right Arrow key scrolls through the available options or tests under the current menu. After selecting an option, the Right Arrow key scrolls through the available values of that option. The Right Arrow key is also used to adjust the darkness of the print in Contrast mode.

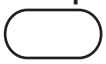
Option

The Option key puts the 1330 in Menu mode. In Menu mode you can configure the 1330 by setting options to the values you want or you can run diagnostic tests to verify the printer's performance. This key is active only in Stop mode.

Save

The Save key is only active in Menu mode. It saves the value of the currently selected option when you are configuring the 1330 from the keypad. The Save key is also used to start a test case under the Diagnostic menu.

Contrast Setup



The Contrast key in Ready mode enables the operator to get into the Contrast mode where the operator can manually adjust the print for darkness. For more details, see Chapter 6.

The Setup key prints a setup line of Hs from the left margin to the right margin. The Setup key is active in Stop mode and Contrast mode to help the operator verify the current print format and print contrast.

Cancel Print

The Cancel Print key cancels any chained SCS printing currently in process. This key is active only in Stop mode.

Chapter 4. Configuring the 1330 in 3270 Mode

The configuration process enables you to customize the 1330 to meet your specific operating needs without assistance from Customer Service. You can also change configuration parameters at any time without service costs.

The 1330 Operator Control Panel provides access to the configuration options. Now that you are familiar with the operator control panel, you are ready to configure the printer. Review the following summary of the configuration process before you begin.

Configuration Procedure

Using the Keys

Here are some general rules for keypad use in Menu mode:

- Press the Option key while in Stop mode to enter Menu mode.
- Press the Up Arrow key to scroll forward in the menu list.
- Press the Down Arrow key to scroll backward in the menu list.
- Press the Right Arrow to scroll forward in the options list under the current menu and to scroll forward in the value list under the currently selected option.
- Press the Left Arrow to scroll backward in the options list under the current menu and to scroll backward in the value list under the currently selected option.
- Press the Start key to select the current option.
- Press the Stop key to exit from a selected option or Menu mode.
- Press the Save key to activate a choice for the currently selected option.

Getting into the Menu Mode

You must get into the Menu mode when you want to configure the 1330. The procedure for getting into the Menu mode is as follows:

1. Press the Stop key when the printer is in Ready mode.
2. Press the Option key to put the printer into the Menu mode. (If you do not have the optional dual interface board installed in your printer, go to Step 4.)

3. If the optional dual interface board is installed in your printer, the status display will give you the option of pressing the Start key for the 3270 menu or pressing the Stop key for the ASCII menu. At this point you may select one of the two menus to enter or press the Cancel key to quit and return the printer to the Ready mode.
4. You are now in the Menu mode. You will see the first menu of the menu list displayed on the first line of the status display and the first option of that menu displayed on the second line of the status display. There may be some abbreviation of the menu name or its option in order to make it fit on the 20-character display.

Scrolling Through Menu Selections

You can find a specific option under a specific menu by using the arrow keys in the following ways:

- Use the Up Arrow key to sequentially scroll forward through the menu list.
- Use the Down Arrow key to sequentially scroll backward through the menu list.

Every time an Up Arrow or Down Arrow key is pressed, you will see changes on the first line of the status display. When the Main menu changes, the default option is automatically changed to list the first available option in the option list under the current menu.

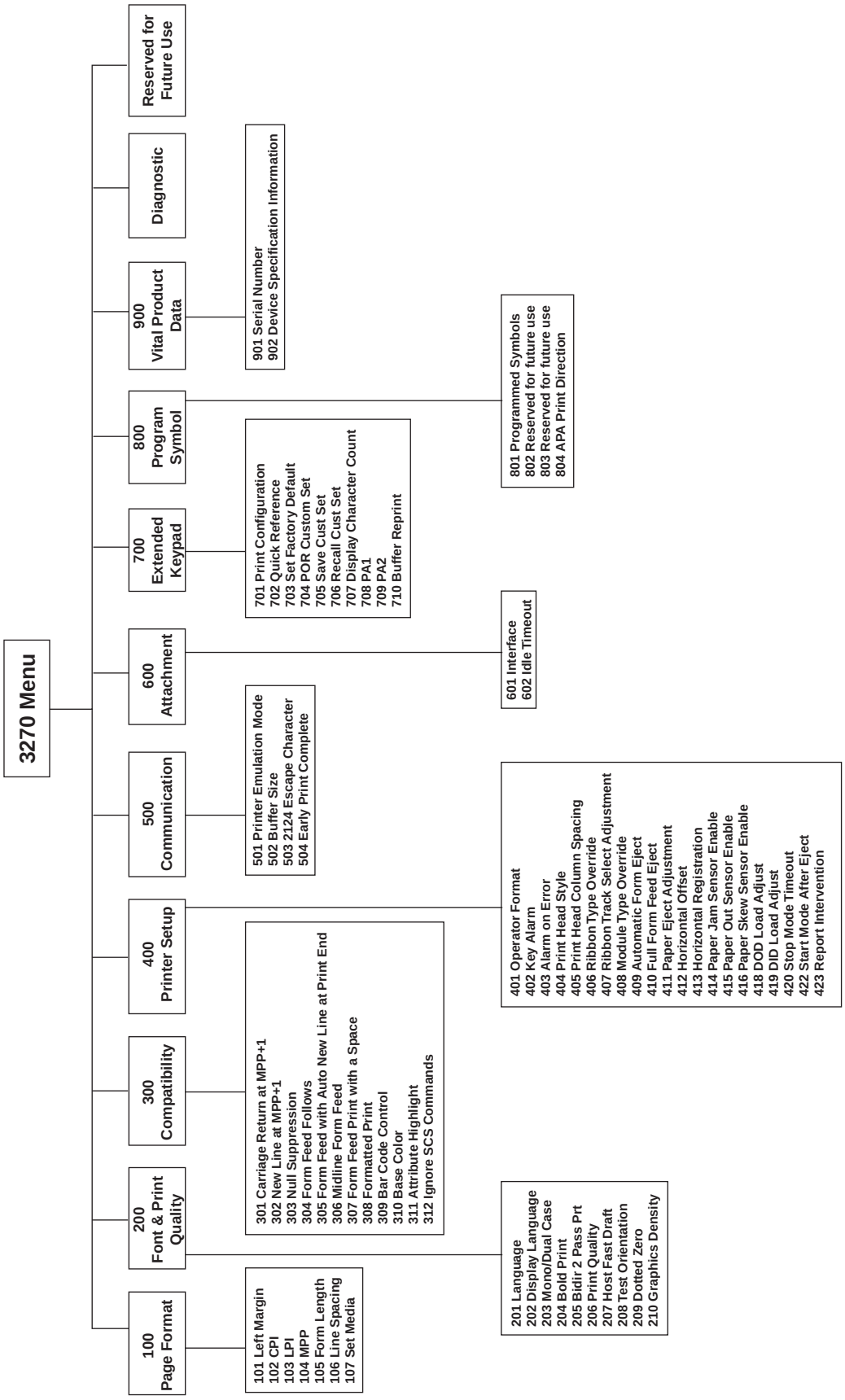
- Use the Right Arrow key to sequentially scroll forward through the options list under the current menu.
- Use the Left Arrow key to sequentially scroll backward through the options list under the current menu.

Every time a Right Arrow or Left Arrow key is pressed, you will see changes on the second line of the status display. The first line of the status display will not change.

All of the arrow keys have a loopback feature that enables you to automatically start at the top of a list once you have gotten to the end. See the tree chart on the following page for the choices in the menu list and all the options under each menu.

To run a test case, follow this procedure:

- Press the Save key to run the current test displayed under the Diagnostic menu on the display. A POR will occur once you exit the Menu mode.
- Press the Stop key to stop a running test case.


3270 Menu
100 Page Format
101 Left Margin
102 CPI
103 LPI
104 MPP
105 Form Length
106 Line Spacing
107 Set Media
200 Font & Print Quality
201 Language
202 Display Language
203 Mono/Dual Case
204 Bold Print
205 Bidir 2 Pass Prt
206 Print Quality
207 Host Fast Draft
208 Test Orientation
209 Dotted Zero
210 Graphics Density
300 Compatibility
301 Carriage Return at MPP+1
302 New Line at MPP+1
303 Null Suppression
304 Form Feed Follows
305 Form Feed with Auto New Line at Print End
306 Midline Form Feed
307 Form Feed Print with a Space
308 Formatted Print
309 Bar Code Control
310 Base Color
311 Attribute Highlight
312 Ignore SCS Commands
400 Printer Setup
401 Operator Format
402 Key Alarm
403 Alarm on Error
404 Print Head Style
405 Print Head Column Spacing
406 Ribbon Type Override
407 Ribbon Track Select Adjustment
408 Module Type Override
409 Automatic Form Eject
410 Full Form Feed Eject
411 Paper Eject Adjustment
412 Horizontal Offset
413 Horizontal Registration
414 Paper Jam Sensor Enable
415 Paper Out Sensor Enable
416 Paper Skew Sensor Enable
418 DOD Load Adjust
419 DID Load Adjust
420 Stop Mode Timeout
422 Start Mode After Eject
423 Report Intervention
500 Communication
501 Printer Emulation Mode
502 Buffer Size
503 2124 Escape Character
504 Early Print Complete
600 Attachment
601 Interface
602 Idle Timeout
700 Extended Keypad
701 Print Configuration
702 Quick Reference
703 Set Factory Default
704 POR Custom Set
705 Save Cust Set
706 Recall Cust Set
707 Display Character Count
708 PA1
709 PA2
710 Buffer Reprint
800 Program Symbol
801 Programmed Symbols
802 Reserved for future use
803 Reserved for future use
804 APA Print Direction
900 Vital Product Data
901 Serial Number
902 Device Specification Information
Diagnostic
Reserved for Future Use

Selecting a Menu Option

When the target menu appears on the first line of the status display, you can get into that option and configure the printer by changing the value of that option. Follow these steps:

1. To select an option, press the Start key when the option you want to change appears on the second line of the status display. Once an option is selected, the originally saved value of that option will appear on the third line of the status display.
2. Press the Left Arrow and Right Arrow keys to move through the list of available values for that option.
3. If you want to change the value of the selected option, press the Save key while the desired value appears on the status display. (An asterisk at the beginning of the third line of the display indicates the currently saved value for the selected option.)
4. Press the Stop key to exit the selected option.

Note: You will not be able to move to the next option or to another menu until you have exited the currently selected option.

Leaving Menu Mode

You can exit the Menu mode by pressing the Stop key until the READY message is displayed.

The Configuration Options

The chart on Page 4-3 provides you with a list of the configuration options for the 1330 in 3270 mode.

This section defines the options in each menu.

100 Page Format

The following options define the printer's page format.

101 – Left Margin

Configuration Option 101 enables you to specify a left margin value for LU3 mode. This value is the first possible print position. Valid values are 1 through 20. The default is 1.

Note: Use this configuration option to adjust the left margin value in LU3 mode only. For LU1 operations, use Configuration Option 412 to change the leftmost printable position or first printable position. Note that Option 412 settings are effective in all print modes.

Note that specifying a left margin value greater than 1 effectively decreases the number of characters you can specify as a line length. For example, at 10 characters per inch (CPI), 132 is the maximum print position (MPP) on the print line. If you specify a left margin value of 15, the print line length will be a maximum of 118 characters (at 10 CPI).

See the chart below for the MPP that corresponds to each CPI selection.

MPP	CPI
132	10
158	12
198	15
220	16.7
225	17.1
264	20

To specify a left margin value, follow the configuration procedure that begins on Page 4-1. When you have made your selection, press Save to activate your changes.

102 – Characters per Inch (CPI)

Use Configuration Option 102 to specify the number of characters per inch that the 1330 will print.

Option	Choice	Meaning
102	1	10 CPI (default)
	2	12 CPI
	3	15 CPI
	4	16.7 CPI
	5	17.1 CPI
	6	20 CPI

Note: When you select 16.7 CPI or 20 CPI, the printing defaults to Data Processing (draft) quality.

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (1, 2, 3, 4, 5, or 6) and press Save to activate your changes.

If an INVALID message is displayed when you change the CPI, first change the MPP setting using Configuration Option 104, then change the CPI.

103 – Lines per Inch (LPI)

Use Configuration Option 103 to specify the lines per inch that the 1330 will print.

Option	Choice	Meaning
103	1	6 LPI (default)
	2	8 LPI
	3	144 LPI (for testing purposes only)

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (1, 2, or 3) and press Save to activate your changes.

Note: For printing at 3 LPI or 4 LPI, refer to Option 106.

Note: LPI is checked for validity by forms length Option 105. If the forms length is too great for the LPI selected, then the LPI is invalid.

104 – Maximum Print Position (MPP)

Configuration Option 104 enables you to specify a maximum print position (MPP) value. This value is the print position of the last character on the print line. The MPP range is based on the following MPP-CPI chart. Valid values are 1 through the value shown in the chart for each CPI. The default is 132.

MPP	CPI
132	10
158	12
198	15
220	16.7
225	17.1
264	20

To specify an MPP value, follow the configuration procedure that begins on Page 4-1. You can enter a different choice, or you can keep the current value by pressing Save.

If an Invalid message is displayed when you change the MPP, first change the CPI setting using Configuration Option 102, then change the MPP.

105 – Form Length

Configuration Option 105 enables you to specify the number of lines per page that the 1330 will print. Valid values are 0 through 660 for 6 LPI and 0 through 880 for 8 LPI. The values are based on a maximum allowable form length of 110 inches.

To specify the forms length, follow the configuration procedure that begins on Page 4-1. You can enter a different value, or you can keep the current value by pressing Save.

106 – Line Spacing

Use Configuration Option 106 to specify whether the 1330 will print double line spacing. Refer to "103 – Lines per Inch (LPI)" above for information on Option 103.

Option	Choice	Meaning
106	1 (Single)	LPI as specified in Option 103; that is, the 1330 prints at 6 LPI or 8 LPI (default)
	2 (Double)	LPI is Option 103 divided by 2; that is,the 1330 prints at 3 LPI or 4 LPI

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (1 or 2) and press Save.

107 – Force Set Media Size

With Configuration Option 107, in IPDS mode, you can choose to unconditionally honor the Set Media Size command. If you choose 0 (disable), the page size will be the smaller of the operator panel settings and the Set Media Size values.

Option	Choice	Meaning
13	0 (Disable)	Honor Set Media Size only when operator panel settings are greater (default)
	1 (Enable)	Honor Set Media Size unconditionally

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0 or 1) and press Save.

200 Font & Print Quality

The following options define the printer's font and print quality.

201 – Language

Configuration Option 201 enables you to select the language character set for the 1330. Note that the selected language character set does not become active until after the new configuration values have been saved and the configuration sequence ended.

Option	Choice	Meaning
201	1	US English (default)
	2	Austrian/German
	3	Austrian/German Alternate
	4	Danish/Norwegian
	5	Danish/Norwegian Alternate
	6	Finnish/Swedish
	7	Finnish/Swedish Alternate
	8	French
	9	Italian
	10	Portuguese Alternate
	11	Spanish
	12	Spanish Alternate
	13	English UK
	14	Belgian
	15	Brazilian
	16	Japanese English
	17	Spanish Speaking

Option	Choice	Meaning
201	18	International Set 5
	19	International Set 1
	20	Japanese Katakana
	21	Portuguese
	22	Swiss Bilingual
	23	French Azerty 105
	24	Canadian French
	25	Canadian Bilingual
	26	Arabic
	27	Hebrew BLT (IBM 4224-compatible)
	28	Hebrew New
	29	Hebrew Old
	30	Thai
	31	Turkish
	32	OCR-A
	33	OCR-B
	34	Icelandic
	35	Latin/ROECE
	36	Cyrillic
	37	New Greek
	38	Old Greek
	39	Yugoslav
	40	Line Drawing

To select a language character set, follow the configuration procedure that begins on Page 4-1. You can select another language character set by entering its corresponding number, or you can keep the current selection by pressing Save.

202 – Display Language

Use Configuration Option 202 to select a specific country language to display messages. The languages available for the option are English (default), French, and German. Some domestic units support only English.

To select a language character set, follow the configuration procedure that begins on Page 4-1.

203 – Mono/Dual Case

Configuration Option 203 enables you to specify whether the 1330 will print in mono case (all characters uppercase) or dual case (characters uppercase and lowercase) in LU3 mode.

Option	Choice	Meaning
203	1	Mono case – all characters are printed in uppercase
	2	Dual case – characters are printed as sent in uppercase and lowercase (default)

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (1 or 2) and press Save.

204 – Bold Print Enable

Use Configuration Option 204 to enable or disable bold print. If you specify YES (by entering 1), bold print will be enabled.

Option	Choice	Meaning
204	0 (No)	Bold print is disabled (default)
	1 (Yes)	Bold print is enabled

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0 or 1) and press Save.

205 – Two-Pass Print Direction

Use Configuration Option 205 to better align the two print head passes on printing that requires two passes. This option could be useful during subtractive color printing.

With Choice 1, the print head will make two unidirectional passes. With Choice 2, the print head will make one bidirectional pass. Choice 1 will give you truer, crisper colors on the printout; however, throughput will be reduced, and Choice 2 will give faster operation.

Option	Choice	Meaning
205	1	The print head makes two unidirectional passes
	2	The print head makes one bidirectional pass (default)

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (1 or 2) and press Save.

206 – Print Quality

With Configuration Option 206, you can choose print quality.

Option	Choice	Meaning
206	1	Data processing (DP) quality (default)
	2	Data processing text (DP text) quality
	3	Near letter quality (NLQ)
	4	Fast draft (FD)

To select the print quality, follow the configuration procedure that begins on Page 4-1. Enter your choice by pressing the appropriate number key (1, 2, 3, or 4), or you can keep the current print quality by pressing Save.

207 – Host Fast Draft

Configuration Option 207 enables you to select the lowest print quality available through the datastream. The default is Disabled.

Option	Choice	Meaning
207	0	Disabled – Lowest print quality available through the datastream is DP mode (default)
	1	Lowest print quality available through the datastream is Fast Draft mode

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0 or 1) and press Save.

208 – Text Orientation

Configuration Option 208 enables you to manually select the direction that text will be printed. The default is left to right.

Option	Choice	Meaning
208	0 (left to right)	Print left to right (default)
	1 (right to left)	Print right to left

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0 or 1) and press Save.

Note: Option 208 will only appear if the Arabic or Hebrew Print Language is selected in Option 201.

209 – Dotted Zero

Use Configuration Option 209 to specify whether a dotted zero should be printed when a zero is selected. If you specify NO, the dotted zero will not be used.

Option	Choice	Meaning
209	0 (No)	The dotted zero will not be used (default)
	1 (Yes)	The dotted zero will be used

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0 or 1) and press Save.

Note: When you request OCR-A, OCR-B, APL, or printing any fonts in diagnostics, the printer will use the undotted zero, regardless of the operator panel selection.

210 – Graphics Density

Use Configuration Option 210 to specify the Graphics Density mode. Low density graphics enables printing to switch from 144 (high) to 72 (low) dots per inch, thus moving the print head at a faster rate.

Option	Choice	Meaning
210	0	Low contrast barcode/low density graphics
	1	High contrast barcode/high density graphics (default)
	2	High contrast barcode/low density graphics
	3	Low contrast barcode/high density graphics
	4	Host selected mode – density specified in datastream

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0, 1, 2, 3, or 4) and press Save.

Note: This option is valid only in IPDS mode. Your choice will override any value from the application program (unless you select Value 4).

300 Compatibility

The following options define the printer's compatibility.

301 – Carriage Return (CR) at MPP + 1

Configuration Option 301 allows you to choose whether the printer will do a carriage return (CR) after the maximum print position (MPP) of a print line has been exceeded.

Option	Choice	Meaning
301	0 (No)	CR at MPP + 1 moves the print head to position 1 on the same line, so that overprinting can occur
	1 (Yes)	CR at MPP + 1 moves the print head to position 1 on the next line (default)

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0 or 1) and press Save.

302 – New Line (NL) at MPP + 1

Use Configuration Option 302 to specify whether the print head will move one new line (NL) or two new lines after the maximum print position (MPP) of a print line has been exceeded.

Option	Choice	Meaning
302	0 (No)	NL at MPP + 1 moves the print head to position 1 on the next line
	1 (Yes)	NL at MPP + 1 moves the print head to position 1 on the line after the next line (default)

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0 or 1) and press Save.

303 – Null Suppression

Use Configuration Option 303 to specify how the printer will handle null characters. This option is valid for LU3 mode only.

Option	Choice	Meaning
303	0 (No)	Does line feed for entire line of nulls
	1 (Yes)	Print position remains unchanged for entire line of nulls (default)

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0 or 1) and press Save.

304 – Form Feed (FF)

Use Configuration Option 304 to specify if the 1330 will perform a form feed (FF) operation before or after a local print, after an LU3 print, or never.

Option	Choice	Meaning
304	1	No FF follows print (No FF added to LU3 print) (default)
	2	FF after local print
	3	FF after LU3 print
	4	FF before local print
	5	FF before and after local print

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (1, 2, 3, 4, or 5) and press Save.

305 – Form Feed with Auto New Line at Print End

Use Configuration Option 305 to specify whether, after a print, the 1330 will move the print head to the first line or second line of the next page.

Option	Choice	Meaning
305	0 (No)	Moves the print head to top of form line 1, character 1
	1 (Yes)	Moves the print head to top of form line 2, character 1 (default)

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0 or 1) and press Save.

306 – Midline Form Feed (FF)

Configuration Option 306 is used to specify whether to use the midline form feed (FF) feature, which allows the form feed character to be placed in any position on a print line.

Option	Choice	Meaning
306	0 (No)	FF only at position 1 (default)
	1 (Yes)	FF at any position from 1 to MPP

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0 or 1) and press Save.

307 – Form Feed (FF) Printed with a Space

Use Configuration Option 307 to specify whether the print head will move to the first character position or second character position on the next top of form (TOF).

Option	Choice	Meaning
307	0 (No)	Puts the print head at TOF, character 1
	1 (Yes)	Puts the print head at TOF, character 2 (default)

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0 or 1) and press Save.

308 – Formatted Print

Configuration Option 308 allows you to select the formatted print override, a feature that honors certain format commands in spite of a formatted print request from the host CPU. Carriage Return, End of Message, and New Line commands are active, and null lines are not suppressed. The host CPU defined line length is honored. To activate the formatted print override feature, select 1.

Option	Choice	Meaning
308	0 (No)	New Line, Carriage Return, and End of Message are ignored – a space is printed (default)
	1 (Yes)	New Line, Carriage Return, and End of Message are executed

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0 or 1) and press Save.

309 – Bar Code Control

Use Configuration Option 309 to configure the bar code printout in 2124 emulation mode.

Option	Choice	Meaning
309	1	Standard – Uses the standard 2124 bar code font in the printer (default)
	2	Compressed Font – Compresses font to a smaller size. Currently only bar code 3 of 9 is available. When the current bar code compressed font is not available, default to standard size.
	3	Closer HRI – Moves HRI up to be closer to the bar code. When configured to this value, HRI will automatically use the compressed font, if available. If not available, uses standard font.

This option shall not have any effect in IPDS bar code printing.

To specify the bar code control default, follow the configuration procedure that begins on Page 4-1. Enter your choice (1, 2, or 3) and press Save.

310 – Base Color

Use Configuration Option 310 to specify whether the base color of the printed text defaults to green or black when you power on the printer. The controller can override the operator field attribute enable/disable setting.

Option	Choice	Meaning
310	1	Base color is black and field attributes are enabled (default)
	2	Base color is black and field attributes are disabled
	3	Base color is green and field attributes are enabled
	4	Base color is green and field attributes are disabled

To specify the base color default, follow the configuration procedure that begins on Page 4-1. Enter your choice (1, 2, 3, or 4) and press Save.

311 – Attribute Selectable Highlighting

Use Configuration Option 311 to choose attribute selectable normal operation, bolding, or underscore.

In LU1, when bolding is selected, the attributes that normally control underscore will control bold instead. Underscore will never be changed. This includes resetting attributes at first in chain or only in chain: bold will be reset and underscore will not be changed.

In LU1, when underscore is selected, operation is identical to normal operation.

In LU3 with a color ribbon, when bolding is selected, character attributes and extended field attributes normally controlling underscore will control bold instead. Underscore will never be changed.

In LU3 with a color ribbon, when underscore is selected, operation is identical to normal operation.

In LU3 with a monochrome ribbon, operation is identical to that of LU3 with a color ribbon, with this addition: when bold or underscore is selected, the field attributes will control bolding or underscore.

Option	Choice	Meaning
311	0	Normal operation (default)
	1	Bolding
	2	Underscore

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0, 1, or 2) and press Save.

312 – Ignore SCS Commands

When enabled, Configuration Option 312 will cause the printer to ignore the Set Line Density and the Set Page Density commands.

Option	Choice	Meaning
312	Enable	Ignore SCS commands
	Disable	Accept SCS commands

400 Printer Setup

The following options define the printer setup.

401 – Operator Format

Configuration Option 401 lets you specify a default print format or an operator selected print format. The 1330 normally powers on with all printer format parameters set to their front panel values. However, you can specify that the 1330 power on with the default printer format values.

The default printer format values are these:

- Lines per inch (LPI) = 6
- Maximum print position (MPP) = 132 (136 for ASCII)
- Maximum page length (MPL) = 66
- Characters per inch (CPI) = 10
- Line spacing = Single
- Case = Dual
- Left margin = 1
- Base color = 1

Note: For IPDS defaults, see Appendix B of this manual.

If you choose an operator selected print format for Option 401, the last value saved for each parameter becomes the new default value when the printer is powered on.

Option	Choice	Meaning
401	1	Default format
	2	Operator selected format (default)

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter the your choice (1 or 2) and press Save.

402 – Key Alarm

Use Configuration Option 402 to specify whether a beep will sound each time a key on the touchpad is pressed. If you specify NO (by entering 0), the touchpad will not produce audible feedback.

Option	Choice	Meaning
402	0 (No)	The alarm does not sound when a key is pressed (default)
	1 (Yes)	The alarm sounds when a key is pressed

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0 or 1) and press Save.

403 – Alarm on Error

Use Configuration Option 403 to specify whether an alarm will sound when an error occurs. If you specify NO (by entering 0), the alarm will not sound.

Option	Choice	Meaning
403	0 (No)	The alarm does not sound when an error occurs
	1 (Yes)	The alarm sounds when an error occurs (though not all errors will sound the alarm) (default)

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0 or 1) and press Save.

404 – Print Head Style

When you change the print head, you must inform the 1330 which print head style is currently installed by using this configuration option.

Caution

Failure to enter the correct print head style under Option 413 can result in poor print head performance and damage to the print head.

Before specifying the print head style, turn the printer off. Refer to the label on the print head to determine which style of print head is installed. If you are installing a new print head, see “Replacing the Print Head” in Chapter 7 of this manual for instructions.

After you have determined the style of print head currently in use, turn the 1330 back on.

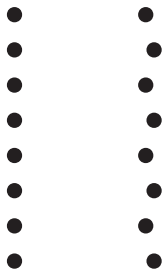
To inform the printer of the print head style, follow the configuration procedure that begins on Page 4-1. Use the chart below to determine your print head style.

Option	Choice	Meaning
404	1	Print head style 1 is installed (default)
	2	Print head style 2 is installed

If the correct print head style number is displayed, press Save. If the number does *not* correspond to the print head style, enter the correct number (1 or 2) and press Save.

405 – Print Head Column Spacing

Configuration Option 405 enables you to correct for spacing variations between the banks of print wires on the print head. If the dots in a vertical column of a character symbol appear to be misaligned, Option 405 can be used to correct this condition. Valid values range from 90 to 100. The default is 95. Refer to “Checking Character Width” in Chapter 7 for complete instructions.



Correct Incorrect

Figure 4-1. Aligned and Unaligned Dots in Characters

406 – Ribbon Type Override

Configuration Option 406 enables you to override the type of ribbon installed in the printer.

Option	Choice	Meaning
406	0	Use ribbon type sensor – no override (default)
	1	Override ribbon type – accent (4-color) ribbon
	2	Override ribbon type – subtractive (8-color) ribbon
	3	Override ribbon type – monochrome ribbon

In normal operation, the default should be used. The other choices enable the printer to be used with a faulty ribbon or ribbon sensor. The other choices are not recommended unless the ribbon or sensor is faulty.

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0, 1, 2, or 3) and press Save.

407 – Ribbon Track Select Adjustment

Configuration Option 407 enables you to adjust the home position of the ribbon track select mechanism. If the printout is showing a color mix, Option 407 can be used to correct this condition. Valid values are 0 through 10. The default is 5.

To adjust the home position, follow the configuration procedure that begins on Page 4-1. 407 TRAK SEL ADJ will display in the status window, followed by the current value. If the printout has a color mix at the top of the characters, enter a lesser value. If the printout shows a color mix at the bottom of the characters, enter a greater value. You can keep the current value by pressing Save.

408 – Module Type Override

Configuration Option 408 enables you to override the type of forms module installed in the printer. You can enter 0 to disable the override and use the module sensor. Or you can choose to override the Document Insertion Device (DID) option, the Document on Demand (DOD) option, or the Continuous Forms module.

Option	Choice	Meaning
408	0	Use module sensor – no override (default)
	1	Override the Continuous Forms module
	2	Override the DOD option
	3	Override the DID option

In normal operation, the default should be used. The other choices enable the printer to be used with a faulty module or sensor. The other choices are not recommended unless the module or sensor is faulty.

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0, 1, 2, or 3) and press Save.

409 – Auto Eject

To make it easy for you to tear off forms, configuration Option 409 enables you to have an automatic form eject after the 1330 has been idle in DOD mode for an operator selectable time period. After additional data is received, the form will be retracted. If you choose 0 (Disabled), the auto eject will not function.

Option	Choice	Meaning
409	0 (Disabled)	Form eject will not occur at the end of data (default)
	1-255 (Seconds)	Form eject will occur n seconds after the buffer is empty

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0 or 1-255) and press Save.

410 – Full Form Feed Eject

Configuration Option 410 is used to specify whether to use the full form feed eject feature, which ejects the form from the print head to the tear point in DOD mode.

Option	Choice	Meaning
410	0 (No)	Normal eject (default)
	1 (Yes)	When the Load/Eject key is pressed, a DOD eject is delayed until the end of the form

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0 or 1) and press Save.

Note: You can select 1 in any mode. However, if the printer is not in DOD mode, the alarm will sound to alert you that the selection will not be effective until the printer is put in DOD mode.

411 – Paper Eject Adjustment

To align the forms for easy tear off, configuration Option 411 is used in conjunction with the DOD Forms Handler module. This option enables you to adjust the distance the paper moves when you press the Load/Eject key while the DOD option is installed. Valid values are 0 through 255. The default is 127.

To adjust the paper eject distance, follow the configuration procedure that begins on Page 4-1. EJECT ADJUST will display in the status window, followed by the current value. If you enter a greater value, the paper will eject higher. If you enter a lesser value, the paper will eject lower. You can keep the current value by pressing Save.

412 – Horizontal Offset

Use Configuration Option 412 to set the first printable position on the page. Values range between 0 and 127. Units are in increments of 0.007 inch (0.02 cm), so the offset is between 0 and 0.88 inch (0 to 2.24 cm). The default is 14.

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (from 0 to 127) and press Save.

Note: If you go to this feature frequently, you may want to use a shortcut to its options. Follow this procedure: In Ready mode press the Option key. That will take you to Express 412, where you can use the arrow keys to select the values as you normally would. Once you have chosen the values you want, press the Start key and your setup will be saved.

413 – Horizontal Registration

Configuration Option 413 enables you to adjust the printed line horizontally for vertical character alignment. Values range between 0 and 255. The default is 127. Units are in increments of 0.0007 inch (0.002 cm). Note that this option is used with bidirectional printing only. For complete instructions, refer to "Checking Print Registration" in Chapter 7.

414 – Paper Jam Sensor Enable

Use Configuration Option 414 to enable or disable the paper jam sensor. If you specify NO (by entering 0), the paper jam sensor will be disabled.

Option	Choice	Meaning
414	0 (No)	The paper jam sensor is disabled
	1 (Yes)	The paper jam sensor is enabled (default)

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0 or 1) and press Save.

415 – Paper Out Sensor Enable

Configuration Option 415 enables and disables the paper out sensor. If the paper out sensor is disabled, the alarm is prevented from sounding when the printer is out of paper.

Caution

When the paper out sensor is disabled, the printer will not be able to detect a paper out condition. If the printer continues printing without paper for an extended period, the print head could be damaged.

Option	Choice	Meaning
415	0 (No)	The paper out sensor is disabled
	1 (Yes)	The paper out sensor is enabled (default)

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0 or 1) and press Save.

416 – Paper Skew Sensor Enable

Use Configuration Option 416 to enable or disable the paper skew sensor. If you specify NO (by entering 0), the paper skew sensor will be disabled.

Option	Choice	Meaning
416	0 (No)	The paper skew sensor is disabled
	1 (Yes)	The paper skew sensor is enabled (default)

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0 or 1) and press Save.

418 – DOD Load Adjust

Use Configuration Option 418 to set the distance between the top of the form and the bottom of the characters in the first print line. Values range from 20 to 255, in .007-inch increments.

For example, if you have a box you want to print in as the first print line, measure the distance from the physical top of the form to the line you want to print on. Convert the distance to .007 inches and enter the distance as the value for the Load Adjust parameter.

Note that you will only be able to access the option that corresponds to the device you have in the printer; that is, if you have a DOD device, the menu will only allow you to access the DOD Load Adjust option.

Loads can be initiated in Stop or Ready mode with a DID device, but only in Ready mode with a DOD device.

419 – DID Load Adjust

Use Configuration Option 419 to set the distance between the top of the form and the bottom of the characters in the first print line. Values range from 20 to 255, in .007-inch increments.

For example, if you have a box you want to print in as the first print line, measure the distance from the physical top of the form to the line you want to print on. Convert the distance to .007 inches and enter the distance as the value for the Load Adjust parameter.

Note that you will only be able to access the option that corresponds to the device you have in the printer; that is, if you have a DID device, the menu will only allow you to access the DID Load Adjust option.

Loads can be initiated in Stop or Ready mode with a DID device, but only in Ready mode with a DOD device.

420 – Stop Mode Timeout (TO)

Configuration Option 420 enables you to select what the 1330 will do when it has been in Stop mode for more than 10 minutes. You can specify whether the printer will continue in Stop mode, or whether it will go to Start mode.

Option	Choice	Meaning
420	1	If the 1330 is left in Stop mode for more than 10 minutes, it will return to Start mode In DOD mode, if the 1330 is left in Stop mode with the forms ejected for more than 10 minutes, the 1330 will automatically retract the forms and return to Start mode
	2	If the 1330 is left in Stop mode for more than 10 minutes, an error message will be displayed, and the 1330 will remain in Stop mode (default)

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (1 or 2) and press Save.

422 – Start Mode After Eject

Configuration Option 422 enables you to set the 1330 so that it automatically goes into ready mode when you press the Load key twice. This will also cause the paper to retract.

Option	Choice	Meaning
422	Yes	The 1330 automatically goes into ready mode when the user presses the Load key twice (default)
	No	The 1330 remains in Stop mode after eject

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (Yes or No) and press Save.

423 – Report Intervention

Configuration Option 423 enables you to set the 1330 so that interventions are or are not reported to the host.

Option	Choice	Meaning
423	Yes	The 1330 reports interventions to the host (default)
	No	The 1330 does not report interventions to the host

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (Yes or No) and press Save.

500 Communication

The following options define the printer's communication selections.

501 – Printer Emulation Mode

Configuration Option 501 enables the printer to emulate a 4224/4230 printer and to support programmed symbols and escape codes.

Option	Choice	Meaning
501	1	The 1330 emulates a 4224 printer with added 3268 programmed symbol support but without IPDS support
	2	The 1330 emulates a 4224 printer with IPDS support
	3	The 1330 emulates a 4224 printer and 2124-2E escape code support but without IPDS support
	4	The 1330 emulates a 4230 printer with IPDS support but without programmed symbol support (default)

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice and press the Save key.

502 – Buffer Size

Configuration Option 502 lets you select the effective size of the display screen from these options:

Option	Choice	Meaning
502	1	1920-byte display screen (default)
	2	2560-byte display screen
	3	3440-byte display screen
	4	3564-byte display screen

To select the screen size, follow the configuration procedure that begins on Page 4-1. You can select a different screen size by pressing the appropriate number key (1, 2, 3, or 4), or you can keep the current size by pressing Save.

503 – 2124 Escape Character

Configuration Option 503 enables you to select an escape character to use in escape sequences for formatting and printing bar codes and optical character recognition fonts. Valid values are 000 though 191. 000 is the default, and indicates that no escape character is selected. For a chart showing all valid escape characters, refer to Figure B-2 in Appendix B of this manual.

Note: The printer must be in 2124 Emulation mode before you can use Option 503. (Choice 3 for Configuration Option 501 must be enabled.)

To select an escape character, follow the configuration procedure that begins on Page 4-1. You can enter a different value or you can keep the current value by pressing the Save key.

504 – Early Print Complete

Configuration Option 504 allows you to enable the printer to send an "Order Complete" message before it has completed printing all the data. The default is Disabled.

Option	Choice	Meaning
504	0 (Disabled)	Does not allow the printer to send an "Order Complete" message before printing data (default)
	1 (Enabled)	Allows the printer to send a "Order Complete" message before the printing of data has been completed

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0 or 1) and press Save.

600 Attachment

The following options define printer attachment.

601 – Interface

Configuration Option 601 enables you to manually select the 3270 or ASCII interface from the dual interface card when installed in the 1330 printer.

Option	Choice	Meaning
601	0	Configure the use of the 3270 interface
	1	Configure the use of the ASCII interface
	2	Share both the 3270 and ASCII interfaces (Default if dual interface board is installed)

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (0 or 1) and press Save. The 1330 will automatically reinitialize to the interface chosen.

Note: The keypad options will change based on the selection you make.

Note: Option 601 will not appear if the dual interface card is not installed.

602 – Idle Timeout

Use Configuration Option 602 to specify the number of seconds that must elapse with no activity in the active mode (3270 or ASCII) before the printer enters idle mode.

Option	Choice	Meaning
602	0	Printer will not exit an active mode.
	1 – n	Printer will exit an active mode when there is no data to process after n seconds.

If data is present in the nonactive mode when the printer goes idle, the printer changes mode and prints the data. Otherwise the printer will remain idle until it detects data in either interface. The range of seconds you may choose from is 0 to 99. In 3270 mode, the default is 30 seconds; in ASCII mode, the default is 5 seconds.

Note: A value of 0 seconds means that if the printer is in the mode indicated by the option or when it enters that mode, it will remain in that mode until this option is changed to a nonzero value or until power is cycled. If both the ASCII and 3270 timeouts are set to 0, the default is to 3270 on POR.

700 Extended Keypad

The following options define the extended keypad.

701 – Print Configuration

Use Configuration Option 701 to print a list of the current configuration values. To print this list, follow the configuration procedure that begins on Page 4-1. 701 PRINT CONFIG will appear in the status window. Press the Save key. The printer will print a list of option numbers, followed by their current values. See Figure 4-2 for a sample configuration value printout.

PRINTER TYPE: 1330/6573-X

	PC	MC	IO
RELEASE LEVEL:	01	01	01
PATCH LEVEL:	02	00	01

RAM: A0000

CHECKSUMS: 26A1 FC24

DUAL INTERFACE BOARD INSTALLED

CFD MODULE

SUBTRACTIVE RIBBON

3270 CONFIGURATION

*** PAGE FORMAT ***

101	LEFT MARGIN		01
102	CPI	1	(10)
103	LPI	1	(6)
104	MPP		132
105	FORM LENGTH		66
106	LINE SPACING	1	Single
107	SET MEDIA	0	Disable

FONT & PRT QUALITY

201	LANGUAGE	01	English US
202	DISPLAY LANG	0	English
203	CASE	2	Dual
204	BOLD PRINT	0	Disable
205	BIDIR 2 PAS PRT	2	Bidirectional
206	PRINT QUALTY	1	DP
207	HOST FAST DR	0	Disable
208	TXT ORIENTATION	1	Right to Left
209	DOTTED ZERO	0	No
210	GRAPHIC DENSITY	1	High Density

** COMPATIBILITY **

301	CR AT MPP+1	1	Yes
302	NL AT MPP+1	1	Yes
303	NULL SUPPRESSION	1	Yes
304	FORM FEED	1	Normal
305	FF W/NL AT @END	1	Yes
306	MIDLINE FF	0	No

Figure 4-2. Configuration Value Printout (3270)
(Continued on next page)

```
307     FF PRNT W/SPACE     1   Yes
308     FORMATTED PRINT     0   Ignr NL/CR/EM
309     BAR CODE CONTROL    1   Standard
310     BASE COLOR          1   Black Enable
311     ATTRIB HIGHLIT      0   No Highlight
312     IGN SCS CMDS        0   Disable

*** PRINTER SETUP ***
401     OPERATOR FORMAT     2   Saved
402     KEY ALARM           0   No Sound
403     ALARM ON ERROR      1   Yes
404     PRNT HEAD STYL      1
405     PRT HD COL SPAC         95
406     RIBBON TYPE         0   Use Sensor
407     RB TRAK SEL ADJ         05
408     MODULE TYPE         0   Use Sensor
409     AUTO EJECT              00
410     FULL FF EJECT       0   No
411     EJECT ADJUSTMENT        127
412     HORZ OFFSET             14
413     HORZ REGSTRN            127
414     PAPER JAM           1   Enable Sensr
415     PAPER OUT           1   Enable Sensr
416     PAPER SKEW          1   Enable Sensr
418     STOP MODE TO        2   Display Err

** COMMUNICATION **
501     PRINTER EMULTN      4   (4230)
502     BUFFER SIZE         1   (1920)
503     2124 ESC CHAR           08
504     EARLY PRT COMP      0   Disable

**** ATTACHMENT ****
601     INTERFACE           2   Share
602     IDLE TIMEOUT            30

* EXTENDED KEYPAD **
704     POR CUSTOM SET          00

** PROGRAM SYMBOL **
801     PROGRAM SYMBOLS     2   (3 si,1 tri)
804     APA PRINT DIR       1   Unidirectionl

*VITAL PRODUCT DATA*
901     SERIAL NUMBER 0000000
902     DEV SPEC INFO 0000000000000000
```

Figure 4-2. Configuration Value Printout (3270)
(Continued from previous page)

702 – Quick Reference

Use Configuration Option 702 to print all possible option values associated with each option.

703 – Set Factory Defaults

Configuration Option 703 is used to reinitialize the nonvolatile RAM (NVRAM). All configuration values will be reset to the factory default values except the following (these options can only be changed by selecting them in Options mode):

- Horizontal Registration
- Print Head Pulse Width
- Print Head Column Spacing
- Print Head Type
- Character Count
- Track Select Adjust

In Stop mode, press the Option key. Follow the configuration procedure on Page 4-1 to bring up this option. Pressing the Save key will reinitialize the NVRAM. The printer will do a power-on reset.

Note: Both the 3270 and ASCII settings are reset to factory defaults.

704 – POR Custom Set

Configuration Option 704 specifies the custom set that will be copied into the current set during POR. A soft POR will occur when you exit this option.

Option	Choice	Meaning
704	0	The current set remains unmodified (default)
	1 – 4	Custom set 1 through 4

To use this option, follow the configuration procedure that begins on Page 4-1.

705 – Save Custom Set

Configuration Option 705 specifies which custom set you will immediately copy the current set into. Parameters (such as CPI, LPI, and so on) that you changed during a print job can be saved into one of these custom sets and recalled later when required.

Option	Choice	Meaning
705	1 – 4	Custom set 1 through 4

To use this option, follow the configuration procedure that begins on Page 4-1.

706 – Recall Custom Set

Configuration Option 706 enables an operator to recall a custom set as needed to set up the printer for a print job. A soft POR will occur when you exit this option.

Option	Choice	Meaning
706	1 – 4	Custom set 1 through 4

To use this option, follow the configuration procedure that begins on Page 4-1.

707 – Display Character Count

Configuration Option 707 will display the current character count on the status display. Use this option to record the character count each time you change the print head, so that Customer Service can better service the 1330.

The character count is displayed as 0000000000, with the appropriate 0s reading as number values to reflect the current character count. For example, if the character count is 1,220,000 characters, the display will read 0001220000. Record the character count on the form provided in Appendix E each time you change the print head.

Note: The life expectancy of the print head is rated solely on the printing of draft characters. DP text, near letter quality, and especially graphics printing represent a much higher print head duty cycle for a given draft character cell location. If a significant amount of printing occurs in these higher duty cycle modes, the character count will be less than the draft character life expectancy. In these situations, a lower than rated character count does not indicate a defective print head.

To view the character count, follow the configuration procedure that begins on Page 4-1. Press the Save key to display the current character count. Record this figure on the form in Appendix E.

The displayed character count cannot be changed during this configuration option.

708 – PA1

Configuration Option 708 is used for special applications. Refer to "Requesting a Host Application Program in SCS Mode" in Chapter 6 of this manual.

In Stop mode, press the Option key. Follow the configuration procedure that begins on Page 4-1 to bring up this option. The status window will display PA1. Pressing the Save key will send a message to the host or controller. If the message to the controller is pending, the printer will display PA1 RESPONSE. If the printer is not in SCS mode, the message INVALID KEY will be displayed. If the controller has accepted the message, nothing will be displayed.

709 – PA2

Configuration Option 709 is used for special applications. Refer to "Requesting a Host Application Program in SCS Mode" in Chapter 6 of this manual.

In Stop mode, press the Option key. Follow the configuration procedure that begins on Page 4-1 to bring up this option. The status window will display PA2. Press the Save key to send a message to the host or controller. If the message to the controller is pending, the printer will display PA2 RESPONSE. If the printer is not in SCS mode, the message INVALID KEY will be displayed. If the controller has accepted the message, nothing will be displayed.

710 – Buffer Reprint

Configuration Option 710 causes any data in the print buffer to be printed.

800 Program Symbol

The following options define the program symbol.

801 – Programmed Symbols

Configuration Option 801 enables you to tell the controller how the printer symbol sets are to be configured. You can define the programmed symbol feature as six single plane sets or as three single plane sets and one triple plane set.

Note: The printer will print in four colors if a four-color accent ribbon is installed (IBM 3268 compatible). The printer will print in eight colors if an eight-color subtractive ribbon is installed.

Option	Choice	Meaning
801	1	Six single plane sets
	2	Three single plane sets and one triple plane set (default)

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (1 or 2) and press Save.

804 – APA Print Direction

Configuration Option 804 chooses either unidirectional or bidirectional printing for All Points Addressable (APA) Programmed Symbols and some bar codes. Unidirectional printing improves dot registration. Bidirectional printing is faster, but a degradation in print registration may occur.

Option	Choice	Meaning
804	1	Unidirectional print (APA standard) – the 1330 prints in one direction, from left to right (default)
	2	Bidirectional print (APA exception) – the 1330 prints in both directions, from left to right and right to left

To specify the APA print direction, follow the configuration procedure that begins on Page 4-1. Enter your choice (1 or 2) and press Save.

900 Vital Product Data

The following options define the vital product data.

901 – Serial Number

Configuration Option 901 enables you to enter a seven-digit serial number from the keypad. This information is reported as part of the Vital Product Data.

To specify your choice, press the Option key with the printer in Stop mode. Follow the configuration procedure that begins on Page 4-1. SERIAL NUMB will display in the status window, followed by the current value. Press the left or right arrow key to enter new information at the location the cursor is flashing. To update the next location to the right or left of the flashing cursor, press the Up Arrow or Down Arrow key. Press the Save key to update the serial number with the new data. To cancel your changes, press the Stop key before pressing the Save key.

The default is 0000000.

902 – Device Specification Information

Configuration Option 902 enables you to enter 16 characters from the keypad. This information is reported as part of the Vital Product Data.

To specify your choice, press the Option key with the printer in Stop mode. Follow the configuration procedure that begins on Page 4-1. DEV SPEC INF will display in the status window, followed by the current value. Press the left or right arrow key to enter new information at the location the cursor is flashing. To update the next location to the right of the flashing cursor, press the Up Arrow or Down Arrow key. Press the Save key to update the device specific information with the new data. To cancel your changes, press the Stop key before pressing the Save key.

The default is 0000000000000000.

Chapter 5. Configuring the 1330 in ASCII Mode

The configuration process enables you to customize the 1330 to meet your specific operating needs without assistance from Customer Service. You can also change configuration parameters at any time without service costs.

The 1330 Operator Control Panel provides access to the configuration options. Now that you are familiar with the operator control panel, you are ready to configure the printer. Review the following summary of the configuration process before you begin.

Configuration Procedure

Using the Keys

Here are some general rules for keypad use in Menu mode:

- Press the Option key while in Stop mode to enter Menu mode.
- Press the Up Arrow key to scroll forward in the menu list.
- Press the Down Arrow key to scroll backward in the menu list.
- Press the Right Arrow to scroll forward in the options list under the current menu and to scroll forward in the value list under the currently selected option.
- Press the Left Arrow to scroll backward in the options list under the current menu and to scroll backward in the value list under the currently selected option.
- Press the Start key to select the current option.
- Press the Stop key to exit from a selected option or Menu mode.
- Press the Save key to activate a choice for the currently selected option.

Getting into the Menu Mode

You must get into the Menu mode when you want to configure the 1330. The procedure for getting into the Menu mode is as follows:

1. Press the Stop key when the printer is in Ready mode.
2. Press the Option key to put the printer into the Menu mode. (If you do not have the optional dual interface board installed in your printer, go to Step 4.)
3. If the optional dual interface board is installed in your printer, the status display will give you the option of pressing the Start key for the ASCII menu or pressing the Stop key for the 3270 menu. At this point you may select one of the two menus to enter or press the Cancel key to quit and return the printer to the Ready mode.

4. You are now in the Menu mode. You will see the first menu of the menu list displayed on the first line of the status display and the first option of that menu displayed on the second line of the status display. There may be some abbreviation of the menu name or its option in order to make it fit on the 20-character display.

Scrolling Through Menu Selections

You can find a specific option under a specific menu by using the arrow keys in the following ways:

- Use the Up Arrow key to sequentially scroll forward through the menu list.
- Use the Down Arrow key to sequentially scroll backward through the menu list.

Every time an Up Arrow or Down Arrow key is pressed, you will see changes on the first line of the status display. When the Main menu changes, the default option is automatically changed to list the first available option in the option list under the current menu.

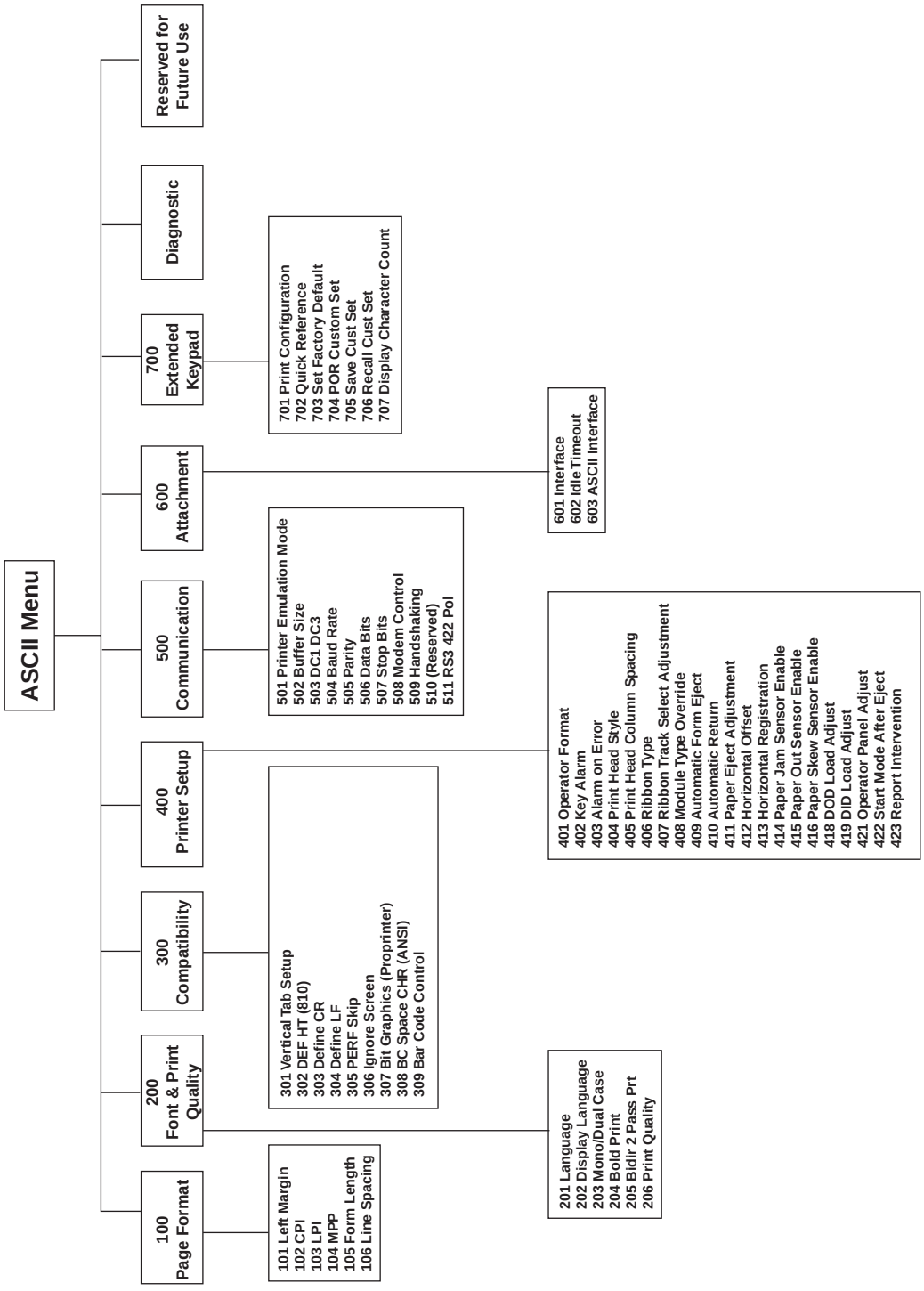
- Use the Right Arrow key to sequentially scroll forward through the options list under the current menu.
- Use the Left Arrow key to sequentially scroll backward through the options list under the current menu.

Every time a Right Arrow or Left Arrow key is pressed, you will see changes on the second line of the status display. The first line of the status display will not change.

All of the arrow keys have a loopback feature that enables you to automatically start at the top of a list once you have gotten to the end. See the tree chart on the following page for the choices in the menu list and all the options under each menu.

To run a test case, follow this procedure:

- Press the Save key to run the current test displayed under the Diagnostic menu on the display. A POR will occur once you exit the Menu mode.
- Press the Stop key to stop a running test case.


ASCII Menu
100 Page Format
101 Left Margin
102 CPI
103 LPI
104 MPP
105 Form Length
106 Line Spacing
200 Font & Print Quality
201 Language
202 Display Language
203 Mono/Dual Case
204 Bold Print
205 Bidir 2 Pass Prt
206 Print Quality
300 Compatibility
301 Vertical Tab Setup
302 DEF HT (810)
303 Define CR
304 Define LF
305 PERF Skip
306 Ignore Screen
307 Bit Graphics (Proprinter)
308 BC Space CHR (ANSI)
309 Bar Code Control
400 Printer Setup
401 Operator Format
402 Key Alarm
403 Alarm on Error
404 Print Head Style
405 Print Head Column Spacing
406 Ribbon Type
407 Ribbon Track Select Adjustment
408 Module Type Override
409 Automatic Form Eject
410 Automatic Return
411 Paper Eject Adjustment
412 Horizontal Offset
413 Horizontal Registration
414 Paper Jam Sensor Enable
415 Paper Out Sensor Enable
416 Paper Skew Sensor Enable
418 DOD Load Adjust
419 DID Load Adjust
421 Operator Panel Adjust
422 Start Mode After Eject
423 Report Intervention
500 Communication
501 Printer Emulation Mode
502 Buffer Size
503 DC1 DC3
504 Baud Rate
505 Parity
506 Data Bits
507 Stop Bits
508 Modem Control
509 Handshaking
510 (Reserved)
511 RS3 422 Pol
600 Attachment
601 Interface
602 Idle Timeout
603 ASCII Interface
700 Extended Keypad
701 Print Configuration
702 Quick Reference
703 Set Factory Default
704 POR Custom Set
705 Save Cust Set
706 Recall Cust Set
707 Display Character Count
Diagnostic
Reserved for Future Use

Selecting a Menu Option

When the target menu appears on the first line of the status display, you can get into that option and configure the printer by changing the value of that option. Follow these steps:

1. To select an option, press the Start key when the option you want to change appears on the second line of the status display. Once an option is selected, the originally saved value of that option will appear on the third line of the status display.
2. Press the Left Arrow and Right Arrow keys to move through the list of available values for that option.
3. If you want to change the value of the selected option, press the Save key while the desired value appears on the status display. (An asterisk at the beginning of the third line of the display indicates the currently saved value for the selected option.)
4. Press the Stop key to exit the selected option.

Note: You will not be able to move to the next option or to another menu until you have exited the currently selected option.

Leaving Menu Mode

You can exit the Menu mode by pressing the Stop key until the READY message is displayed.

The Configuration Options

The chart on Page 5-3 provides a list of the configuration options for the 1330 in ASCII mode.

This section defines the options in each menu.

100 Page Format

The following options define the printer's page format.

101 – Left Margin

Configuration Option 101 enables you to specify a left margin value. This value is the first possible print position. Valid values are 1 through 20. The default is 1.

If you specify a left margin value greater than 1, you decreases the number of characters you can specify as a line length. For example, at 10 characters per inch (CPI), 136 is the maximum print position (right margin) on the print line. If you specify a left margin value of 15, the line will print only 122 characters (at 10 CPI).

See Option 104 for information on setting the maximum print position.

To specify a left margin value, follow the configuration procedure that begins on Page 5-1.

Note: Using the Left Margin option reduces the number of characters that are available on a given line. See Option 412, Horizontal Offset, for an alternative way of moving an entire line to the left.

102 – Characters per Inch (CPI)

Use Configuration Option 102 to specify the number of characters per inch that the 1330 prints.

Option	Choice	Meaning
102	1	10 characters per inch (default)
	2	12 characters per inch
	3	15 characters per inch
	4	17.1 characters per inch
	6	20 characters per inch (draft only)

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice (1, 2, 3, 4, or 6) and press Save.

If an INVALID message is displayed when you change the CPI to 20, first change the Print Quality setting using Configuration Option 206, then change the CPI.

103 – Lines per Inch (LPI)

Use Configuration Option 103 to specify the lines per inch that the 1330 prints.

Option	Choice	Meaning
103	1	6 lines per inch (default)
	2	8 lines per inch
	3	144 lines per inch (for testing purposes only)

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice (1, 2, or 3) and press Save.

Note: For printing at 3 LPI or 4 LPI, refer to Option 106.

104 – Maximum Print Position (MPP)

Configuration Option 104 enables you to specify a maximum print position (right margin) value. This value is the print position of the last character on the print line. The MPP range is based on the MPP-CPI chart shown below. Valid values are 1 through the value shown for each CPI in the chart. The default setting is 136.

If you plan to print on standard letter size forms, set the MPP to 80 or less.

MPP	CPI
136	10
163	12
204	15
233	17.1
272	20

To specify an MPP value, follow the configuration procedure that begins on Page 5-1. You can enter a different choice, or you can keep the current value by pressing Save.

If an Invalid message is displayed when you change the MPP, first change the CPI setting using Configuration Option 102, then change the MPP.

105 – Form Length

Use Configuration Option 105 to specify the number of lines per page that the 1330 prints. Valid values are 1 through 127. The default setting is 66.

To specify the forms length, follow the configuration procedure that begins on Page 5-1. You can enter a different value, or keep the current value by pressing Save.

106 – Line Spacing

Use Configuration Option 106 to specify whether the 1330 will print at 6 LPI or 8 LPI (double), as specified in Option 103, or whether the 1330 will print at 3 LPI or 4 LPI (single). Refer to "103 – Lines per Inch (LPI)," for information on Option 103.

Option	Choice	Meaning
106	1 (Single)	The 1330 prints at 6 LPI or 8 LPI as specified in Option 103 (default)
	2 (Double)	The LPI is the value selected in Option 103 divided by 2; that is, the 1330 prints at 3 LPI if 6 LPI was chosen, or at 4 LPI if 8 LPI was chosen

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice (1 or 2) and press Save.

200 Font & Print Quality

The following options define the printer's font and print quality.

201 – Language

Use Configuration Option 201 to select the language character set for the 1330. The selected language character set does not become active until after the new configuration values have been saved and the configuration sequences are ended.

Note: For Proprinter emulation, use PC Character Set (1), ASCII-EBCDIC (3), or PC Multilingual (4).

For TI-810 emulation, use PC Character Set (1), Katakana (2), or ASCII-EBCDIC (3).

The PC and the PC Multilingual character sets include US English and international characters. See Appendix C for listings.

Option	Choice	Meaning
201	1	PC Character Set (default)(Code Page 437)
	2	PC Multilingual (Code Page 850)
	3	ASCII - EBCDIC (Code Page 437 modified)
	4	810 – Katakana
	5	OCR-A ASCII (Code Page 340)
	6	OCR-A EBCDIC (Code Page 892)
	7	OCR-B ASCII (Code Page 340)
	8	OCR-B EBCDIC (Code Page 893)
	9	Hebrew A (Code Page 862)(PC Char Set 2)
	10	Hebrew B (Code Page 862 modified)(PC Char Set 2)
	11	Hebrew C (Code Page 862 modified)
	12	PC Character Set 2

Note: Language choice 3, ASCII - EBCDIC, replaces the three ASCII characters [ ] ^ with the three EBCDIC characters ¢ | ¬ respectively.

Note: Language choices 9 and 10 (Hebrew A and B) and 12 (PC Character Set 2) select PC Character Set 2. All other language selections, whether chosen from the operator panel or from an application, select PC Character Set 1.

To select a language character set, follow the configuration procedure that begins on Page 5-1. You can select another language character set by entering its corresponding number, or you can retain the current selection by pressing Save.

202 – Display Language

Configuration Option 202 is a front panel option that enables users to select the language displayed on the front panel. The languages available for the option are English (default), French, and German. Some domestic units support only English.

Note: When this option is changed, a software POR occurs.

To select a language character set, follow the configuration procedure that begins on Page 5-1.

203 – Mono/Dual Case

Use Configuration Option 203 to specify whether the 1330 prints in mono case (all characters uppercase) or dual case (characters uppercase and lowercase).

Option	Choice	Meaning
203	1	Mono case – all characters are printed in uppercase
	2	Dual case – characters are printed as sent in uppercase and lowercase (default)

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice (1 or 2) and press Save.

204 – Bold Print Enable

Use Configuration Option 204 to enable or disable bold print. If you specify YES (by entering 1), bold print is enabled and all characters are printed in bold. If you specify NO (by entering 0), bold print occurs only when the datastream indicates that bold print is to take place.

Option	Choice	Meaning
204	0 (No)	Bold print is disabled (default)
	1 (Yes)	Bold print is enabled

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice (0 or 1) and press Save.

205 – Two-Pass Print Direction

Use Configuration Option 205 to better align the two print head passes on printing that requires two passes.

With Choice 1, the print head makes two unidirectional passes. With Choice 2, the print head makes one bidirectional pass. Choice 1 may give you better graphics on the printout than choice 2, but throughput is reduced. Choice 2 gives faster operation than choice 1.

Note: Use Choice 1 only in Graphics mode.

Option	Choice	Meaning
205	1	The print head makes two unidirectional passes
	2	The print head makes one bidirectional pass (default)

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice (1 or 2) and press Save.

206 – Print Quality

With Configuration Option 206, you can choose between three print qualities, data processing, data processing text, or near letter quality.

Option	Choice	Meaning
206	1	Data processing (draft) quality (default)
	2	Data processing text (DP text) quality
	3	Near letter quality (NLQ)(not at 20 CPI)

To select the print quality, follow the configuration procedure that begins on Page 5-1. Enter your choice by pressing the appropriate number key (1, 2, or 3), or you can keep the current print quality by pressing Save.

300 Compatibility

The following options define the printer compatibility.

301 – Vertical Tab Setting

Use Configuration Option 301 to specify how the printer handles vertical tab settings.

Option	Choice	Meaning
301	0	Clear all tabs (default)
	1 - 112	Set tab stops for line number entered (113 through 998 are invalid and are ignored)

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter 0 to clear all tabs, then enter each line number for which you want to set a vertical tab. Valid line numbers are 1 through 112. Press the Save key after each line number you enter. You can enter up to 112 line numbers. When you have entered all the tab settings, press Save.

An asterisk is displayed next to each line number in which tabs are saved. If the Save key is pressed at a line where a tab is already set, that tab is removed. Tabs are never saved after the printer is turned off. This means that you must set tabs each time the printer is powered on.

302 – Define Horizontal Tab (810)

Use Configuration Option 302 to specify if the 1330 will perform a horizontal tab in TI-810 mode, either as a TI-810 specified horizontal tab or as an IBM Proprinter specified horizontal tab.

Option	Choice	Meaning
302	0	HT = TI-810 horizontal tab (default)
	1	HT = Proprinter horizontal tab

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice (0 or 1) and press Save.

303 – Carriage Return Definition

Configuration Option 303 is used to define the carriage return. You can choose a carriage return or a carriage return with a line feed.

Option	Choice	Meaning
303	1	CR = carriage return (default)
	2	CR = carriage return with line feed

To make your choice, follow the configuration procedure that begins on Page 5-1. Enter 1 for carriage return or 2 for carriage return with line feed, and press Save.

304 – Line Feed Definition

Use Configuration Option 304 to specify if the 1330 will perform a line feed or a line feed combined with a carriage return.

Option	Choice	Meaning
304	1	LF = line feed (default)
	2	LF = line feed with carriage return

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice (1 or 2) and press Save.

305 – Automatic Perforation Skip

Use Configuration Option 305 to specify whether or not the printer automatically skips a form perforation. If this option is enabled, the printer skips three lines at the end of each page.

Option	Choice	Meaning
305	0	Disable automatic perforation skip (default)
	1	Enable automatic perforation skip

To make your choice, follow the configuration procedure that begins on Page 5-1. Enter 1 to enable automatic perforation skip or 2 to disable automatic perforation skip, and press Save.

306 – Ignore Sign

Configuration Option 306 ignores ANSI CRT control codes and the printer Deselect command when received in the datastream. This option only affects TI-810 emulation.

Option	Choice	Meaning
306	0	Process ANSI CRT control codes as 810 control codes and accept Deselect command (default)
	1	Ignore ANSI CRT control codes and ignore the Deselect command

To specify your choice, follow the configuration procedure that begins on Page 5-1. Press the Right Arrow or Left Arrow key to make your choice. Then press the Save key to make your choice the active selection.

Note: The Up Arrow and Down Arrow keys cannot be used to get to this option.

307 – Bit Graphics

Configuration Option 307 enables and disables Proprinter Bit Graphics escape commands and the Shift-In (SI) command. This option only affects the Proprinter emulation mode.

Option	Choice	Meaning
307	0	Disable Proprinter Bit Graphics and the SI command
	1	Enable Proprinter Bit Graphics and the SI command (default)

To specify your choice, follow the configuration procedure that begins on Page 5-1. Press the Right Arrow or Left Arrow key to make your choice. Then press the Save key to make your choice the active selection.

308 – BC Space CHR

Configuration Option 308 enables and disables the processing of the ANSI Space character as an actual bar code character. With this Option disabled, the ANSI Standard rules apply to the processing of Space characters. With this Option enabled, the ANSI Space character is processed as an actual bar code character and the ANSI comma character serves as a bar code separator as well as a space character to move the print position one space to the right.

Option	Choice	Meaning
308	0	Disable the printing of the Space character as a bar code character (ANSI Standard) (default)
	1	Enable the printing of the Space character as a bar code character (4224 ASCII Standard)

To specify your choice, follow the configuration procedure that begins on Page 5-1. Press the Right Arrow or Left Arrow key to make your choice. Then press the Save key to make your choice the active selection.

Note: This option does not affect 4224 ASCII bar codes.

309 – Bar Code Control

Use Configuration Option 309 to configure the ANSI bar code printout.

Option	Choice	Meaning
309	1	Standard – Uses the standard bar code font in the printer. Standard ANSI bar code will be preceded and followed by 1/4 of an inch of white space. (default)
	2	Compressed Font – Reserved. When the current bar code compressed font is not available, default to standard size.
	3	Closer HRI – The human readable is moved up to be closer to the bar code itself. The 1/4 of an inch of white space that precedes and follows the bar code are removed.

To specify the bar code control default, follow the configuration procedure that begins on Page 5-1. Enter your choice (1, 2, or 3) and press Save.

400 Printer Setup

The following options define the printer setup.

401 – Save Operator Format

Configuration Option 401 lets you specify a default print format or an operator selected print format. The 1330 normally powers on with all printer format parameters set to their front panel values. However, you can specify that the 1330 power on with the default printer format values.

The default printer format values are these:

- Lines per inch (LPI) = 6
- Maximum print position (MPP) = 132 (136 for ASCII)
- Maximum page length (MPL) = 66
- Characters per inch (CPI) = 10
- Line spacing = Single
- Case = Dual
- Left margin = 1
- Base color = 1

Note: For IPDS defaults, see Appendix B of this manual.

If you choose an operator selected print format for Option 401, the last value saved for each parameter becomes the new default value when the printer is powered on.

Option	Choice	Meaning
401	1 (No)	Do not save operator selected format
	2 (Yes)	Save operator selected format (default)

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice (1 or 2) and press Save.

402 – Key Alarm

Use Configuration Option 402 to specify whether a beep sounds each time a key on the touchpad is pressed. If you specify NO (by entering 0), the touchpad does not produce audible feedback.

Option	Choice	Meaning
402	0 (No)	The alarm does not sound when a key is pressed (default)
	1 (Yes)	The alarm sounds when a key is pressed

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice (0 or 1) and press Save.

403 – Alarm on Error

Use Configuration Option 403 to specify whether a beep sounds when an error occurs. If you specify NO (by entering 0), the alarm does not sound.

Option	Choice	Meaning
403	0 (No)	The alarm does not sound when an error occurs
	1 (Yes)	The alarm sounds when an error occurs (though not all errors sound the alarm) (default)

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice (0 or 1) and press Save.

404 – Print Head Style

When you change the print head, you must inform the 1330 which print head style is currently installed by using this configuration option.

Caution

Failure to enter the correct print head style under Option 413 can result in poor print head performance and damage to the print head.

Before specifying the print head style, turn the printer off. Refer to the label on the print head to determine which style of print head is installed. If you are installing a new print head, see "Replacing the Print Head" in Chapter 7 for instructions.

To select a print head style, follow the configuration procedure that begins on Page 5-1. Enter your choice (1 or 2) as defined in the following table:

Option	Choice	Meaning
404	1	Style 1 print head (default)
	2	Style 2 print head

If the correct print head style number is displayed, press Save. If the number does *not* correspond to the print head style, enter the correct number (1 or 2) and press Save.

405 – Print Head Column Spacing

Configuration Option 405 enables you to correct for spacing variations between the banks of print wires on the print head. If the dots in the letters on the printout do not appear to

be aligned vertically, Option 405 can be used to correct this condition. Valid values range from 90 to 100. The default is 95. Refer to "Checking Character Width" in Chapter 7 for complete instructions.

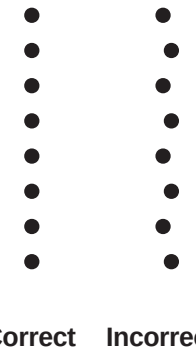


Figure 5-1. Aligned and Unaligned Dots in Characters

406 – Ribbon Type Override

Configuration Option 406 enables you to override the type of ribbon installed in the printer.

Option	Choice	Meaning
406	0	Use ribbon type sensor – no override (default)
	1	Override ribbon type – accent (4-color) ribbon
	2	Override ribbon type – subtractive (8-color) ribbon
	3	Override ribbon type – monochrome ribbon

In normal operation, the default should be used. The other choices enable the printer to be used with a faulty ribbon or ribbon sensor. The other choices are not recommended unless the ribbon or sensor is faulty.

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice (0, 1, 2, or 3) and press Save.

407 – Ribbon Track Select Adjustment

Configuration Option 407 enables you to adjust the home position of the ribbon track select mechanism. If the printout is showing a color mix, Option 407 can be used to correct this condition. Valid values are 0 through 10. The default is 2.

To adjust the home position, follow the configuration procedure that begins on Page 5-1. When TRAK SEL ADJ displays in the status window, it will be followed by the current value. If the printout has a color mix at the top of the characters, enter a lesser value. If the printout shows a color mix at the bottom of the characters, enter a greater value. You can keep the current value by pressing Save.

408 – Module Type Override

Use Configuration Option 408 to override the type of forms module installed in the printer. Enter 0 to disable the override and use the module sensor or enter 1, 2, or 3 to override the Document Insertion Device (DID) option, the Document on Demand (DOD) option, or the Continuous Forms module.

Option	Choice	Meaning
408	0	Use module sensor – no override (default)
	1	Override module type – Continuous Forms module
	2	Override module type – Document on Demand (DOD) option
	3	Override module type – Document Insertion Device (DID) option

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice (0, 1, 2, or 3) and press Save.

409 – Auto Eject

Configuration Option 409 enables automatic Document on Demand (DOD) paper eject. You can select the amount of time to wait by adjusting the value of Option 409. Use Option 410, Auto Return, to set the time the printer waits after receiving new data to return forms to the print position.

Option	Choice	Meaning
409	00	Disable automatic DOD eject timer (default)
	1-255	The number of seconds to wait after printing has stopped before automatically ejecting page

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice and press the Save key.

Note: For this option to work, the Forms Handler module must be installed. If another module is installed, this option is ignored.

410 – Auto Return

Configuration Option 410 sets a timer used by the automatic Document on Demand (DOD) paper return. The value of Option 409 (Auto Eject) must be greater than zero for Auto Return to have an effect. You can select the amount of time to wait before automatically returning the paper by adjusting the value of Option 410.

Option	Choice	Meaning
410	00	Return automatically with no warning when the next print is ready for processing
	1-255	The number of seconds to wait after the next print is ready for processing before automatically returning to the next print position (default = 5 seconds)

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice and press the Save key.

Note: If the value is greater than 0, the alarm will sound as a warning that the printer is about to retract the paper to the next print position to continue processing data.

411 – Paper Eject Adjustment

Configuration Option 411 is used in conjunction with the Forms Handler module. With this option, you can adjust the distance the paper moves when you press the Load/Eject key while the DOD option is installed. Valid values are 0 through 255. The default setting is 127.

To adjust the paper eject distance, follow the configuration procedure that begins on Page 5-1. If you enter a value greater than the current value, the paper ejects higher. If you enter a lesser value, the paper ejects lower. You can keep the current value by pressing Save.

412 – Horizontal Offset

The 1330 uses a fixed position paper tractor on the left side. To adjust the location of the first print position, use Configuration Option 412. Values range from 0 through 127. Units are in increments of 0.007 inch (0.02 cm), so the offset is between 0 and 0.88 inch (0 to 2.24 cm). The default setting is 0.

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice (from 0 to 127) and press Save.

Note: If you go to this feature frequently, you may want to use a shortcut to its options. Follow this procedure: In Ready mode press the Option key. That will take you to Express 412, where you can use the arrow keys to select the values as you normally would. Once you have chosen the values you want, press the Start key and your setup will be saved.

413 – Horizontal Registration

Configuration Option 413 enables you to adjust the printed line horizontally for vertical character alignment. Values range from 0 through 255. The default setting is 127. Units are in increments of 0.0007 inch (0.002 cm). This option is used with bidirectional printing only. For complete instructions, refer to "Checking Print Registration" in Chapter 7.

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice (from 0 to 255) and press Save.

414 – Paper Jam Sensor Enable

Use Configuration Option 414 to enable or disable the paper jam sensor. If you specify NO (by entering 0), the paper jam sensor is disabled.

Option	Choice	Meaning
414	0 (No)	The paper jam sensor is disabled
	1 (Yes)	The paper jam sensor is enabled (default)

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice (0 or 1) and press Save.

415 – Paper Out Sensor Enable

Configuration Option 415 enables and disables the paper out sensor. If the paper out sensor is disabled, the alarm is prevented from sounding when the printer is out of paper.

Warning

When the paper out sensor is disabled, the printer cannot detect a paper out condition. If the printer continues printing without paper for an extended period, the print head could be damaged.

Option	Choice	Meaning
415	0 (No)	The paper out sensor is disabled
	1 (Yes)	The paper out sensor is enabled (default)

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice (0 or 1) and press Save.

416 – Paper Skew Sensor Enable

Use Configuration Option 416 to enable or disable the paper skew sensor. If you specify NO (by entering 0), the paper skew sensor is disabled.

Note: Paper skew is checked only when the Forms module is in DID mode.

Option	Choice	Meaning
416	0 (No)	The paper skew sensor is disabled
	1 (Yes)	The paper skew sensor is enabled (default)

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice (0 or 1) and press Save.

418 – DOD Load Adjust

Use Configuration Option 418 to set the distance between the top of the form and the bottom of the characters in the first print line. Values range from 20 to 255, in .007-inch increments. For example, if you have a box you want to print in as the first print line, measure the distance from the physical top of the form to the line you want to print on. Convert the distance to .007 inches and enter the distance as the value for the Load Adjust parameter.

Note that you will only be able to access the option that corresponds to the device you have in the printer; that is, if you have a DOD device, the menu will only allow you to access the DOD Load Adjust option. Loads can be initiated in Stop or Ready mode with a DID device, but only in Ready mode with a DOD device.

419 – DID Load Adjust

Use Configuration Option 419 to set the distance between the top of the form and the bottom of the characters in the first print line. Values range from 20 to 255, in .007-inch increments. For example, if you have a box you want to print in as the first print line, measure the distance from the physical top of the form to the line you want to print on. Convert the distance to .007 inches and enter the distance as the value for the Load Adjust parameter.

Note that you will only be able to access the option that corresponds to the device you have in the printer; that is, if you have a DID device, the menu will only allow you to access the DID Load Adjust option. Loads can be initiated in Stop or Ready mode with a DID device, but only in Ready mode with a DOD device.

421 – Operator Panel Adjust

Use Configuration Option 421 to adjust the intensity of the LCD on the Operator Panel. The intensity ranges from light to dark.

Option	Choice	Meaning
421	1	Light
	2	Normal (default)
	3	Dark

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice (1, 2, or 3) and press Save.

422 – Start Mode After Eject

Configuration Option 422 enables you to set the 1330 so that it automatically goes into ready mode when you press the Load key twice. This will also cause the paper to retract.

Option	Choice	Meaning
422	Yes	The 1330 automatically goes into ready mode when the user presses the Load key twice (default)
	No	The 1330 remains in Stop mode after eject

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (Yes or No) and press Save.

423 – Report Intervention

Configuration Option 423 enables you to set the 1330 so that interventions are or are not reported to the host.

Option	Choice	Meaning
423	Yes	The 1330 reports interventions to the host (default)
	No	The 1330 does not report interventions to the host

To specify your choice, follow the configuration procedure that begins on Page 4-1. Enter your choice (Yes or No) and press Save.

500 Communication

The following options define the printer's communication selections.

501 – Printer Emulation Mode

Configuration Option 501 selects the printer emulation.

Option	Choice	Meaning
501	1	Proprinter (default)
	2	TI-810
	3-5	Reserved

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice and press the Save key.

For a listing of the commands supported in each emulation, refer to Appendix B of this manual.

502 – Buffer Size

Configuration Option 502 enables you to select the effective size of the 1330's input or communications buffer:

Option	Choice	Meaning
502	1	2K buffer (default)
	2	8K buffer
	3	16K buffer
	4	32K buffer (maximum)

To select buffer size, follow the configuration procedure that begins on Page 5-1. Enter your choice (1, 2, 3, or 4) and press Save.

503 – DC1/DC3 Recognition

Configuration Option 503 enables or disables the printer's recognition of DC1/DC3 characters. This option enables the host to control the online/offline state of the printer.

Option	Choice	Meaning
503	0	Disable recognition
	1	Enable recognition (default)

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice and press the Save key.

504 – Baud Rate

Configuration Option 504 selects the printer baud rate. The printer baud rate must match that of the host.

Option	Choice	Meaning
504	1	56K (RS-422 only)
	2	38.4K (RS-422 only)
	3	19.2K
	4	9600 (default)
	5	4800
	6	2400
	7	1200
	8	600
	9	300
	10	150
	11	110

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice and press the Save key.

505 – Parity

Configuration Option 505 selects the printer parity. Parity must match that of the host.

Option	Choice	Meaning
505	0	No parity
	1	Odd parity
	2	Even parity (default)

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice and press the Save key.

506 – Data Bits

Configuration Option 506 selects 7-bit or 8-bit data. This selection must match that of the host.

Option	Choice	Meaning
506	1	Select 7-bit data (default)
	2	Select 8-bit data

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice and press the Save key.

507 – Stop Bits

Configuration Option 507 selects one or two stop bits. This selection must match that of the host.

Option	Choice	Meaning
507	1	Select one stop bit (default)
	2	Select two stop bits

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice and press the Save key.

508 – Modem Control

Configuration Option 508 selects whether the printer will recognize or ignore DCD/DSR modem control signals.

Option	Choice	Meaning
508	0	Ignore DCD/DSR modem control signals
	1	Recognize DCD/DSR modem control signals (default)

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice and press the Save key.

509 – Handshaking

Configuration Option 509 controls host-printer handshaking.

Option	Choice	Meaning
509	1	XON/XOFF – send XOFF to host to stop sending (default)
	2	Busy to DTR – indicate online and not busy on DTR line
	3	Reverse channel – indicate busy on interface connector pin 11
	4	None – used for troubleshooting interface, not normally used

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice and press the Save key.

510 – (Reserved)

511 – RS-422 Polarity

Configuration Option 511 controls the polarity of the RS-422 receive and transmit signals.

Option	Choice	Meaning
511	0	Invert the polarity
	1	Do not invert the polarity (default)

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice and press the Save key.

600 Attachment

The following options define the printer's attachment selections.

601 – Interface

Configuration Option 601 enables you to manually select the 3270 or ASCII interface from the dual interface card when installed in the 1330 printer.

Option	Choice	Meaning
601	0	Configure the use of the 3270 interface
	1	Configure the use of the ASCII interface
	2	Share both the 3270 and ASCII interfaces (Default if dual interface board is installed)

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice (0 or 1) and press Save. The 1330 will automatically reinitialize to the interface chosen.

Note: The keypad options will change based on the selection you make.

Note: Option 601 will not appear if the dual interface card is not installed.

602 – Idle Timeout

Use Configuration Option 602 to specify the number of seconds that must elapse with no activity in the active mode before the printer enters idle mode.

Option	Choice	Meaning
602	0	Printer will not exit an active mode.
	1 – n	Printer will exit an active mode when there is no data to process after n seconds.

If data is present in the nonactive mode when the printer goes idle, the printer changes mode and prints the data. Otherwise the printer will remain idle until it detects data in either interface. The range of seconds you may choose from is 0 to 99. In 3270 mode, the default is 30 seconds; in ASCII mode, the default is 5 seconds.

Note: A value of 0 seconds means that if the printer is in the mode indicated by the option or when it enters that mode, it will remain in that mode until this option is changed to a nonzero value or until power is cycled.

603 – Interface Type

Configuration Option 603 selects the interface type.

Option	Choice	Meaning
603	0	Parallel (default)
	1	RS-232
	2	RS-422

To specify your choice, follow the configuration procedure that begins on Page 5-1. Enter your choice and press the Save key.

700 Extended Keypad

The following options define the extended keypad.

701 – Print Configuration

Use Configuration Option 701 to print a list of the current configuration values. To print this list, follow the configuration procedure that begins on Page 5-1. When the second line of the display reads PRINT CONFIG, press the Save key. The printer prints a list of option numbers, followed by their current values. See Figure 5-2 for a sample configuration value printout.

Note: The sample printout on the following pages shows all the printer default values.

```
PRINTER TYPE:                   1330/6573-X

                                PC MC   IO
RELEASE LEVEL:                  01      01      01

PATCH LEVEL:                    02      00      01

RAM:    A0000

CHECKSUMS:                      26A1    FC24

DUAL INTERFACE BOARD INSTALLED

CFD MODULE

SUBTRACTIVE RIBBON

ASCII CONFIGURATION

*** PAGE FORMAT ***
101     LEFT MARGIN             01
102     CPI                     1(10)
103     LPI                     1  (6)
104     MPP                     136
105     FORM LENGTH             66
106     LINE SPACING            1  Single

*FONT & PRT QUALITY*
201     LANGUAGE                01 PC Char Set
202     DISPLAY LANG            0  English
203     CASE                    2  Dual
204     BOLD PRINT              0  Disable
205     BIDIR 2 PAS PRT         2  Bidirectional
206     PRINT QUALTY            1  DP

** COMPATIBILITY **
301     VERTI TAB SETUP         00
302     DEF HORIZ TAB           0  810 (Default)
303     DEFINE CR               1  CR = CR
304     DEFINE LINEFEED         1  LF = LF
305     PERFORATN SKIP          0  Disable
306     IGNORE SCREEN           0  Disable
307     BIT GRAPHICS            1  Enable
308     BC SPACE CHR            0  Disable
309     BAR CODE CONTROL        1  Standard
```

Figure 5-2. Configuration Value Printout (ASCII)
(Continued on next page)

```
*** PRINTER SETUP ***
401     OPERATOR FORMAT     2   Saved
402     KEY ALARM           0   No Sound
403     ALARM ON ERROR      1   Yes
404     PRNT HEAD STYL      1
405     PRT HD COL SPAC         95
406     RIBBON TYPE         0   Use Sensor
407     RB TRAK SEL ADJ         05
408     MODULE TYPE         0   Use Sensor
409     AUTO EJECT              00
410     AUTO RETURN ADJ         05
411     EJECT ADJUSTMENT        127
412     HORZ OFFSET             14
413     HORZ REGSTRN            127
414     PAPER JAM           1   Enable Sensr
415     PAPER OUT           1   Enable Sensr
416     PAPER SKEW          1   Enable Sensr

** COMMUNICATION **
501     PRINTER EMULTN      1   PROPRINTER
502     BUFFER SIZE         1   2K
503     DC1 / DC3           1   Recognize
504     BAUD RATE           4   ( 9600 )
505     PARITY              2   Even
506     DATA BITS           1   Seven
507     STOP BITS           1   One
508     MODEM CONTROL       1   DCD/DSR Used
509     HANDSHAKING         1   XON/XOFF
510     (RESERVED)
511     RS422 POL           1   Dont Invert

**** ATTACHMENT ****
601     INTERFACE           2   Share
602     IDLE TIMEOUT            05
603     ASCII INTERFACE     0   PARALLEL

* EXTENDED KEYPAD **
704     POR CUSTOM SET          00
```

Figure 5-2. Configuration Value Printout (ASCII)
(Continued from previous page)

702 – Quick Reference

Use Configuration Option 702 to list all possible option values associated with each option.

703 – Set Factory Defaults

Configuration Option 703 is used to reinitialize the nonvolatile RAM (NVRAM). All configuration values will be reset to the factory default values except the following (these options can only be changed by selecting them in Options mode):

- Horizontal Registration
- Print Head Pulse Width
- Print Head Column Spacing
- Print Head Type
- Character Count
- Track Select Adjust

In Stop mode, press the Option key. Follow the configuration procedure that begins on Page 5-1 to bring up this option. Pressing the Save key will reinitialize the NVRAM. The printer will do a power-on reset.

Note: Both the 3270 and ASCII settings are reset to factory defaults.

704 – POR Custom Set

Configuration Option 704 specifies the custom set that will be copied into the current set during POR. A soft POR will occur when you exit this option.

Option	Choice	Meaning
704	0	The current set remains unmodified (default)
	1 – 4	Custom set 1 through 4

To use this option, follow the configuration procedure that begins on Page 5-1.

705 – Save Custom Set

Configuration Option 705 specifies which custom set you will immediately copy the current set into.

Option	Choice	Meaning
705	1 – 4	Custom set 1 through 4

To use this option, follow the configuration procedure that begins on Page 5-1.

706 – Recall Custom Set

Configuration Option 706 specifies which custom set you will immediately recall as the current set. A soft POR will occur when you exit this option.

Option	Choice	Meaning
706	1 – 4	Custom set 1 through 4

To use this option, follow the configuration procedure that begins on Page 5-1.

707 – Display Character Count

Configuration Option 707 displays the current character count on the status display. Use this option to record the character count each time you change the print head, so that Customer Service can better service the 1330.

The character count is displayed as n,nnn,nnn,nnn, with the appropriate **n**'s reading as number values to reflect the current character count. For example, if the character count is 1,220,000 characters, the display reads 0001220000. Record the character count on the form provided in Appendix E each time you change the print head. The maximum value for the character count is 9,999,999,999. Note these two points about the character count:

- The character counter will count only characters, not graphics.
- Draft and near letter quality characters are counted equally, one per character. Print head life, however, is based on draft characters only.

To view the character count, follow the configuration procedure that begins on Page 5-1. When DISP CHR CNT appears on the second line of the display, press the Save key to display the current character count. Record this figure on the form in Appendix E.

The displayed character count cannot be changed during this configuration option.

Chapter 6. Operating the 1330

Operating procedures for the 1330 can be divided into three categories:

- Setting the print format
- Specific operating procedures
- General operating procedures

Setting the Print Format

The print format consists of four parameters: characters per inch, line length (maximum print position), forms length, and vertical line density.

The following points explain 1330 print format:

- The number of characters per inch (CPI) can be selected by using Configuration Option 102. You can choose 10, 12, 15, 16.7, 17.1, or 20 CPI. When the CPI is changed, the line length correspondingly changes. See "Setting the Line Length" in this chapter for the maximum print position (line length) that corresponds to each CPI setting.
- The line length is the distance, in character widths, between the first (leftmost) print position and the last print position. Line length is commonly indicated by the maximum print position (MPP) (Option 104).
- The forms length is the length of the forms in lines. To calculate the forms length, multiply the length of the paper in inches by the lines per inch (LPI) setting (Option 105).

  For example, if your forms are 11 inches long, and the LPI setting is 8, the forms length in lines is 88.
- The vertical line density consists of the lines per inch setting and the single space/double space setting (Option 103) as outlined below:

Vertical Line Density	6/8 LPI	Single/Double Space
8 LPI	8 LPI	Single
6 LPI	6 LPI	Single
4 LPI	8 LPI	Double
3 LPI	6 LPI	Double

Note: The LPI value, CPI value, forms length value, and maximum print position value can be overridden by the host application system. The Change Case and Change Space option settings are not overridden by the host system.

If no operator set values have been saved for the print format settings, that is, choice 2 has been saved for Configuration Option 401 (see Chapter 4), the 1330 assumes the following default values:

Function	Default
Characters Per Inch	10
Line Length	132 (136 for ASCII)
Forms Length	66
Lines Per Inch	6 LPI

The following sections describe the procedures for setting each print format parameter for the 1330.

Specific Operating Procedures

Specific operating procedures include the following:

- Specifying mono case or dual case (see Option 203)
- Printing the setup line
- Adjusting the top of form position
- Setting the alarm control (see Option 402)
- Storing printer configuration values

Printing the Setup Line

Printing the setup line allows you to visually inspect character spacing, line length, left margin position, and forms alignment. If you press the Form Feed key after printing the setup line, you can visually verify the forms length and line spacing.

1. Press the Stop key to place the 1330 in Stop mode.
2. Press the Setup key to print the setup line.
3. To return to Start mode, press the Start key.

Adjusting the Top of Form Position

Once you have printed the setup line, you can visually verify the top of form position, as well as the left and right margins of the print line. If you want to fine adjust the top of form position, follow these steps:

1. Press Stop to place the 1330 in Stop mode.
2. Press the Form Feed key to advance the forms to the next top of form position.
3. To fine adjust the top of form position, press the Up Arrow key or Down Arrow key. Each time you press one of these keys, the form is moved 0.007 inch (0.18 mm).
4. Press the Top of Form key to inform the 1330 of the new location.
5. To check the top of form, press the Form Feed key.
6. To return the 1330 to Start mode, press the Start key.

Storing Printer Configuration Values

You can configure the printer differently for various types of print jobs, save these configurations in separate custom sets, and recall a specific custom set for particular print jobs. However, some of the configuration options that do not generally need to be changed for different types of print jobs are not included in the custom set. In 3270 mode, these options include the following:

- Horizontal Offset
- Horizontal Registration
- Print Head Pulse Width
- Print Head Column Spacing
- Print Head Type
- Character Count
- Track Select Adjust
- Vital Product Data User Information
- Vital Product Data Serial Number
- POR Custom Set

In ASCII mode, the following options are not included in custom sets:

- ASCII Interface
- ASCII Baud Rate
- ASCII Data Bits

- ASCII Modem Control
- ASCII IRC
- ASCII Buffer Size
- ASCII Recognize DC1/DC3
- ASCII Parity
- ASCII Stop Bits
- ASCII Handshaking
- ASCII RS-422 Invert

These options will stay in effect for the printer no matter which custom set you are using. For the remaining option settings, you can save them to one of four available custom sets by using Option 705, Save Custom Set.

Any custom set may be recalled at any time by using Option 706, Recall Custom Set. A soft POR will occur when you exit this option that will put any changes into effect.

By using Option 704, POR Custom Set, you can also specify which custom configuration setting to bring up when the printer is powered on. If the printer loses power accidentally before the current configuration is saved to any of the custom sets, you can still recall that set of configurations by using a POR if Option 704 is configured to 0.

All of the custom sets are initially set to the factory default values. If you need to reset the current setting to the factory defaults by using Option 703, Set Factory Defaults, the values saved in the custom sets are not affected. For details about custom set options, see Chapter 4.

General Operating Procedures

General operating procedures for the 1330 consist of the following:

- Reprinting the print buffer
- Requesting a host application program in SCS mode
- Halting a print operation in SCS mode

Reprinting the Print Buffer

If you encounter an out of forms or paper jam condition during a print operation, you can start the current print job over by reprinting the print buffer. Since the data is deleted from the print buffer when a print job is completed, you cannot reprint the print buffer after the print job has completed. However, if your job was interrupted, the reprint buffer operation will allow you to reprint the entire message.

To reprint the print buffer, follow these steps:

1. Press Stop to place the 1330 in Stop mode.
2. Correct any problems that need attention.
3. Press Form Feed to advance the forms to the first line of the next page.
4. Go to Buffer Reprint (Option 710) and press Save.
5. To return to Start mode and resume printing, exit Option mode and press the Start key.

Note: In SCS operations, the buffer cannot be reprinted. For this reason, when you use Buffer Reprint in SCS operations, the 1330 sends an Intervention Required (IR) message requesting that the last set of data be retransmitted.

Requesting a Host Application Program in SCS Mode

SCS users can use the Program Attention (PA1 and PA2) key functions to request an application program from the host. Follow these steps to use the PA1 or PA2 key function:

1. Press Stop to put the 1330 in Stop mode.
2. Enter Menu mode.
3. Select Option 708 for PA1.

   or

   Select Option 709 for PA2.
4. Press the Save key.
5. Return to Start mode.

Halting a Print Operation in SCS Mode

To cancel a print operation in SCS mode, follow these steps:

1. Press Stop to place the 1330 in Stop mode.
2. Press the Cancel Print key to halt printing and clear the print buffer.

To suspend printing, follow these steps:

1. Press Stop. This will put the printer in Stop mode and suspend printing temporarily.
2. You can return the 1330 to Start mode by pressing the Form Feed key (to advance to top of form, if necessary), followed by Start.

Chapter 7. Maintaining the 1330

Maintenance procedures for the 1330 include allowing adequate ventilation, cleaning the printer, replacing and changing the print head as necessary, and adjusting the print registration as required.

Ventilation

Inadequate ventilation of the 1330 may result in overheating, which can damage the printer. Make sure that the vents are kept clean and free of obstructions, and that there is at least six inches (15 cm) of clearance on each side of the printer.

Cleaning the Printer

Cleaning the 1330 involves dusting it as necessary. If the cabinet requires further cleaning, use a damp cloth with a mild liquid detergent. Avoid dripping liquid into the print mechanism or onto the touchpad keys. Do not use a solvent to clean the cabinet.

Replacing the Ribbon

Chapter 2 of this manual contains complete instructions for installing the available ribbons for the 1330.

Replacing the Print Head

When the print head shows excessive wear – for example, when characters are formed incompletely despite a correct platen gap lever setting – the print head should be replaced. You can install a new print head by following the instructions given in this section.

Note: Before you replace the print head, check the print quality. If the dots in the characters are not correctly located, refer to "Checking Character Width and Print Registration," later in this chapter.

To order a print head kit for the 1330, contact your MTX sales representative. Use the following part number: 953567-001.

Note: When the 1330 has been printing for an extended time, the print head may occasionally slow down, start printing unidirectionally, and pause at the end of each line. This is not a sign of excessive wear. These conditions occur automatically as a preventive measure when the temperature of the print head exceeds the normal operating level. As the temperature drops, the print head will speed up and resume bidirectional printing.

To replace the print head, follow these instructions, referring to Figures 7-1 through 7-4.

Warning

If the printer has been in operation, the print head may be hot. Allow time for the print head to cool before you attempt to change it.

1. Press the Stop key to put the printer offline, then press the Option key.
2. Use Option 707 to see the character count displayed on the status window, *or* use Option 701 to print out all configuration item numbers, followed by their current values. Record the character count on the form provided in Appendix E of this manual. (See "707 – Display Character Count" in Chapter 4 if you need further instructions on finding the character count.)
3. Power off the printer and unplug it from the AC outlet.
4. Raise the printer cover.
5. Set the platen gap lever away from the platen (toward you) as far as it will go. If you need instructions, refer to Chapter 2.
6. Remove the ribbon cartridge. Refer to Chapter 2 if you need instructions.
7. Slide the print head to the middle of the printer.
8. Unsnap the black plastic restraining bar to loosen the cable so you can see the connectors.
9. Remove the connectors shown in Figure 7-1.

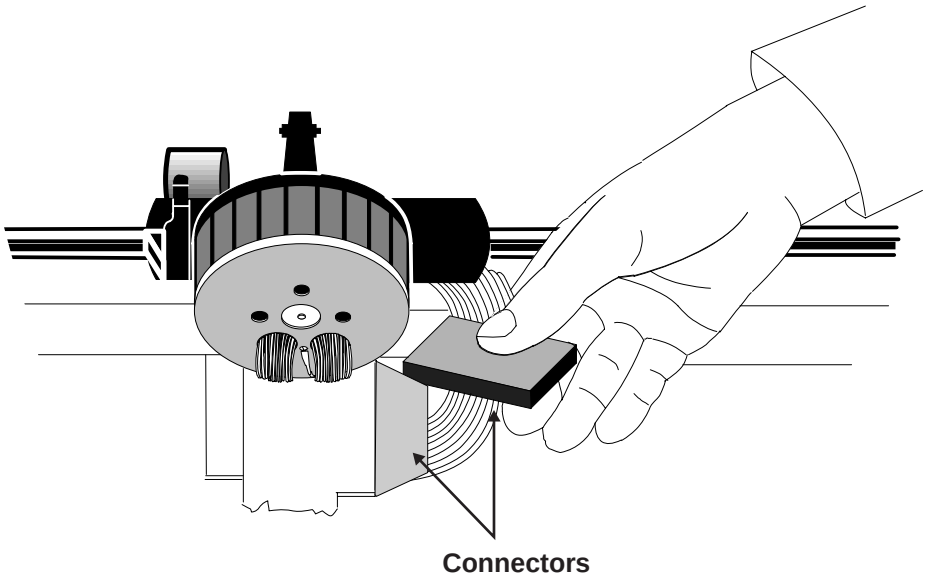


Figure 7-1. Replacing the Print Head

Note: Print head style 2 has a connector at the top of the print head. This connector does *not* have to be disconnected when you remove the print head.

Note: Take care that the wiring from the ribbon select motor stays through the carriage restraining hook. Refer to Figure 7-2.

10. If it is installed, remove the tie-wrap holding the print head wires to the carriage.

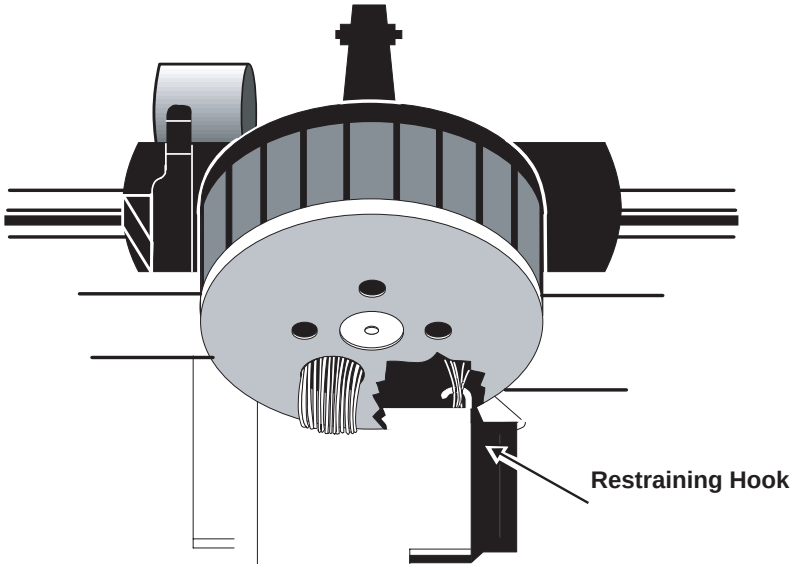


Figure 7-2. Carriage Restraining Hook

11. Remove the mounting screws on each side of the print head with the hex key provided with the replacement print head. See Figure 7-3. Remove the print head by carefully pulling it straight up.

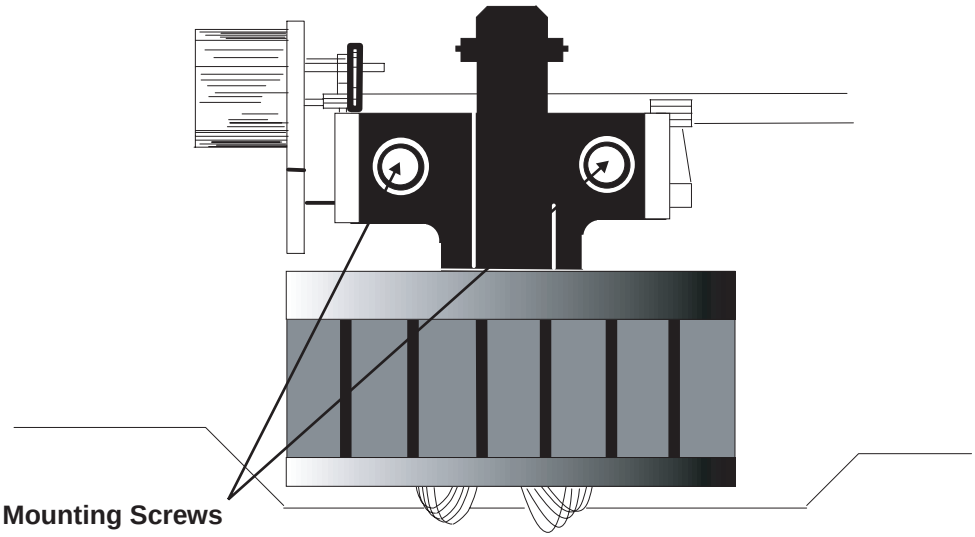


Figure 7-3. Mounting Screws

12. Refer to the label on the print head to determine the style of the replacement print head you are installing (style 1 or style 2).
13. To install the new print head, reverse the print head removal procedure.
14. Install a new tie-wrap to secure the print head wire cable bundle *against* the hook area on the carriage assembly. (See Figure 7-4.)
15. Cut and remove the excess from the tie-wrap after assembly.
16. Referring to Figure 7-4, reinstall the connector(s). Make sure that the Ribbon Shifter Connector cable passes between the two print head cables, so that it will not interfere with printer operation.
17. Replace the cable, placing the white strip on the cable under the restraining bar. Snap the bar down.
18. Plug the 1330 into the AC outlet and power on the unit.
19. Press the Stop key, then the Option key.
20. Select Option 404.
21. Enter the number of the print head style you have installed (1 or 2). The status window display will show your selection.

Caution

Failure to enter the correct print head style under Configuration Option 404 can result in poor print head performance and can damage the print head.

22. Press the Save key and the Stop key. If you plan to print in data processing quality, enter 1. If you want to print in data processing text quality, enter 2. If you want to print in near letter quality, enter 3. Press Save.
23. You can resume printing by pressing Stop until STOP is displayed, then Start.

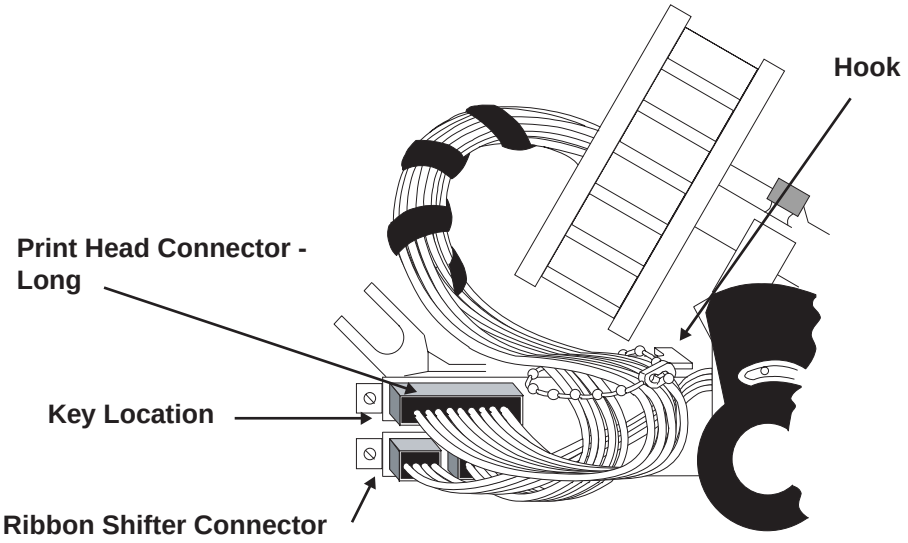


Figure 7-4. Carriage - Side View

Checking Character Width and Print Registration

After changing the print head, you may want to check the printed character width and print registration. Print registration refers to the proper vertical alignment of characters from line to line at the right and left margins of the printed text. When the print registration is correct, characters are properly aligned at the margins, as shown in Figure 7-5.

H H H H H H H H H H H H H H H H H H H H H H H H H H
H H H H H H H H H H H H H H H H H H H H H H H H H H
H H H H H H H H H H H H H H H H H H H H H H H H H H
H H H H H H H H H H H H H H H H H H H H H H H H H H

Figure 7-5. Proper Print Registration

To check character width and print registration after changing the print head and before printing text, you can use Option 204 in bold and normal text to print out samples of the character width and registration. Make sure the print head is printing bidirectionally for separate test results, then use Configuration Options 413 and 405 to make adjustments as necessary. Follow these steps to check character width and print registration.

Checking Character Width

1. Load 14-inch wide (35.6-cm wide) paper in the printer. If necessary, refer to the paper loading instructions in Chapter 2 of this manual.
2. Make sure that the 1330 is in Stop mode. If necessary, press the Stop key.
3. Use Configuration Option 204 to enable bold printing and Option 205 to enable bidirectional printing.
4. Select Option D02 under the Diagnostic menu.
5. Press the Save key to start the test. The display window will show the test number and the message TEST IS RUNNING.

   The 1330 will print columns of Hs, which will enable you to check character width.
6. Press the Stop key to stop the test. The test number and name will be displayed.
7. Examine the printout. If the character width looks consistent and you do *not* want to adjust it, go to Step 12.

   or

   If you *do* want to adjust the character width, go on to Step 8.
8. Press the Stop key.
9. Select Option 405.
10. Compare the Hs on the printout. If the characters with the greater than (>) symbols are wider than the characters on the following line, you should *decrease* the PH COL SPACE value. For example, if the current value is 91 and the characters are too wide, decrease the value to 90.

    If the characters with the greater than symbol are narrower than the characters on the following line, you should *increase* the PH COL SPACE value. For example, if the current value is 91, increase it to 92.
11. To verify your change, press Save and exit Menu mode. The printer will reinitialize. Go back to Step 4 of this procedure, and repeat Steps 4 through 7 until the character width is acceptable in the center portion of the printout.
12. Before going on to "Checking Print Registration," use Configuration Option 204 to cancel bold print, then exit Menu mode.

Checking Print Registration

1. Make sure that 14-inch wide (35.6-cm wide) paper is loaded in the printer.
2. Make sure that the 1330 is in Stop mode. If necessary, press the Stop key.
3. Select Option D02 under the Diagnostic menu.
4. Press the Save key to start the test. The display window will show the test number and the message TEST IS RUNNING.

   The 1330 will print columns of Hs, which will enable you to check the print registration.
5. Press the Stop key to stop the test. The test number and name will be displayed.
6. Examine the printout. If the print registration looks good and you do *not* want to adjust it, go to Step 11.

   or

   If you *do* want to adjust the print registration, go on to Step 7.
7. Press the Stop key.
8. Select Option 413, Horizontal Registration.
9. Compare the Hs on the printout with the (enlarged) characters in Figures 7-6 and 7-7. If the characters with the greater than (>) symbol are offset to the *left* of the characters on the following line, you should *increase* the horizontal registration value. For example, if the current value is 131 and the characters are offset to the left, increase the value to 141.

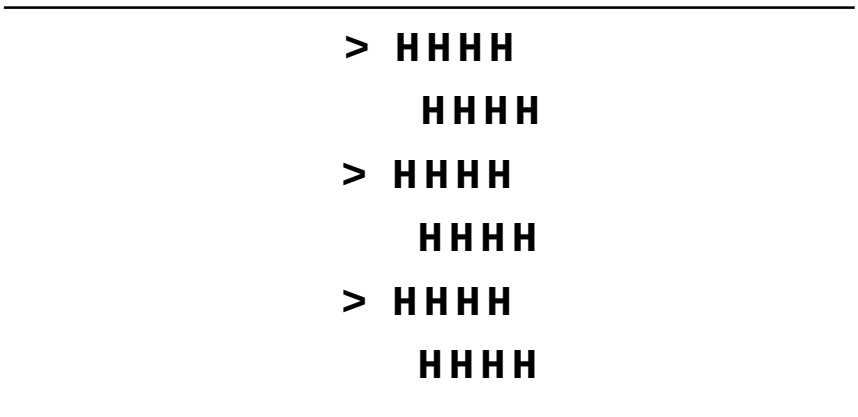


Figure 7-6. Increase Print Registration Value

If the characters with the greater than symbol are offset to the *right* of the characters on the following line, you should *decrease* the horizontal registration value. For example, if the current value is 131, decrease it to 121.

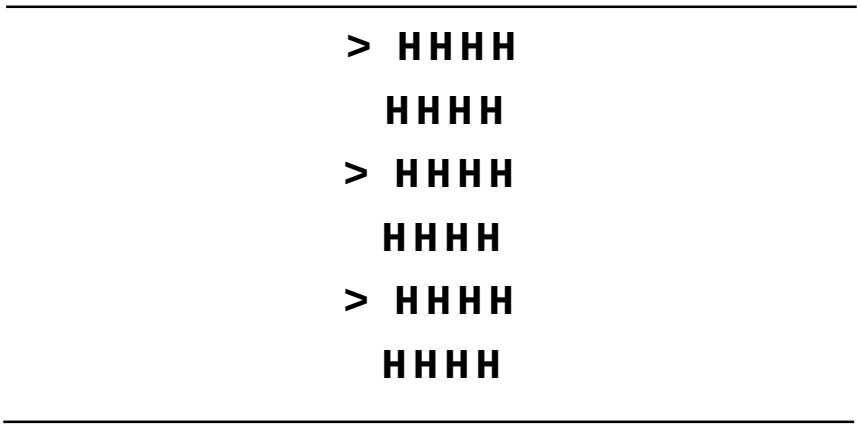


Figure 7-7. Decrease Print Registration Value

10. To verify your change, press Save and exit Menu mode. The printer will reinitialize. Go back to Step 3 of this procedure until print registration is acceptable in the center portion of the printout.

Note: If you cannot obtain an acceptable print registration sample, or if the center portion of the printout is acceptable, but the column of Hs to the right and left is not properly registered, call Customer Service.

11. To return the printer to normal operation, press the Start key.

Chapter 8. Error Detection and Recovery

The 1330 has encountered an error condition when one or both of the following occur:

- The alarm sounds.
- An error message appears in the display window.

When either of these conditions occurs, immediately press the Stop key to place the 1330 in Stop mode. If the Stop key will not work, write down the displayed error message and call Customer Service.

Types of Errors

Three types of errors can occur on the 1330:

- Intervention required (IR) conditions
- General errors
- Unusual errors

Intervention Required Conditions

Intervention required conditions are errors that can be quickly corrected by the operator, as outlined below:

Display Message	Meaning
01 PAPER OUT	The printer is out of forms
02 PAPER JAM	The printer forms are jammed
04 PAPER SKEW	The printer forms are skewed
05 COVER OPEN	The printer cover is open
88 NO RIBBON	No ribbon is installed in the printer

See Appendix A of this manual for more complete information and recovery instructions regarding these error conditions.

General Error Conditions

General errors are caused by hardware, software, or communications failures, and are identified by an error message in the display window. These errors cannot be as readily corrected by the operator and may require the assistance of a Field Engineer. Refer to the Status and Error Message Chart in Appendix A for error descriptions and recovery procedures. If you cannot correct the error, power the printer off, wait 15 seconds, then power the printer back on. If the problem persists, contact Customer Service.

Unusual Error Conditions

If you encounter an error that is not listed in the Status and Error Message Chart (Appendix A), reset the 1330 by powering off then on to see if the error recurs. If it does, contact Customer Service.

If the display window goes blank, there has probably been a loss of power to the printer. Check to make sure that the power cord is plugged in, that the outlet is receiving power, and that the Power switch is set to | (ON). If the outlet is supplying the proper voltage and the 1330 is properly plugged in, hardware trouble is apparent. Contact Customer Service.

Warning

If the unit begins to overheat, smoke, or make an unusual noise, turn off the unit immediately! Next, unplug the power cord, remove the paper from the printer, and contact Customer Service.

If the forms jam or tear, check to make sure that the forms are routed and aligned properly. Ensure that the form tractors are positioned properly to accommodate the paper width, that the feed holes on the forms are positioned evenly over the tractor feed pins, and that the tractor doors are closed. Be sure that the forms are feeding smoothly from their box, and that they are positioned correctly. Refer to Chapter 2 of this manual to review the instructions for installing forms.

If the ribbon binds, make sure that it is routed properly. Refer to Chapter 2 to review the instructions for installing the ribbon cartridge.

If the error cannot be determined by visual check or by the power-on Basic Assurance test (BAT), contact the host system's communications control center and request a check of the communications line. If the problem persists, call Customer Service.

Appendix A. Status and Error Message Chart

Message	Definition	Recovery
01 PAPER OUT	No paper is installed.	Install new paper.
02 PAPER JAM	Paper is jammed.	Clear the jammed paper and reinstall the paper.
03 FORMS EJECTD	The 1330 ejected the forms after the Load/Eject key was pressed. (This code is displayed only when the DOD form device is being used.)	Press the Load/Eject key to reload the forms.
04 PAPER SKEW	The 1330 sensed that the forms are loaded incorrectly.	Reinstall the forms.
05 COVER OPEN	The 1330 sensed that the printer cover is not completely closed.	Press Stop and close the cover.
06 BELL	The 1330 received a command from the host to sound the alarm.	Press Stop to stop the alarm, then press Start to continue printing.
07 INV PCIA ORD	The 1330 received an invalid order from the host.	Press Stop, reset top of form, press Start, and resubmit the print job.
08 STOP MODE TO	The 1330 has been offline for over 10 minutes.	Press Start to stop the alarm and return to Ready mode.
09 INVALID KEY	You pressed a key that is invalid at this time.	Press Start and make sure you are following a proper operational sequence.
19 COMM FAIL	The attachment board failed its power-on test.	Power the 1330 off, then back on. If this code appears again, call Customer Service.
27 LINE CHECK	The host CPU, the communication lines, or the coax cable is down.	If the host CPU and communication lines are operating properly, check both ends of the coax cable for loose connections or shorts. The printer may recover by itself. If not, power the 1330 off, then back on.
31 PAPER OUT TO	A paper out condition has existed for over 10 minutes.	Press Stop. Install new paper. Press Start.
32 PAPER JAM TO	A paper jam condition has existed for over 10 minutes.	Press Stop, clear the jammed paper, and reinstall the paper. Press Stop.
34 PAPER SKEW TO	A paper skew condition has existed for over 10 minutes.	Press Stop and reinstall the paper.

Message	Definition	Recovery
35 COVR OPEN TO	A cover open condition has existed for over 10 minutes.	Press Stop, close the cover, then press Start.
41 INV ESC SEQ	The printer has received an invalid 2124 escape sequence.	Press Stop and Start.
43 INV BAR SEQ	The printer has detected an invalid 2124 barcode sequence.	Press Stop and Start.
44 BAR PAST RM	A 2124 barcode has exceeded the right margin.	Press Stop and Start.
50 MC RESTART	The motor controller has executed an invalid restart instruction.	Reset the 1330. If the condition persists, call Customer Service.
51 MC CRC ERROR	The motor controller has detected a PROM CRC error.	Call Customer Service.
52 MC RAM ERROR	The motor controller has detected a RAM error.	Power the 1330 off. If the condition persists, call Customer Service.
53 MC SERVO ERR	The motor controller has detected a servo error.	Power the 1330 off. If the condition persists, clean the carriage. If the condition still persists, call Customer Service.
54 MC RESTR ERR	The motor controller has detected a problem with the carriage.	Check for obstructions in the carriage, then reset the 1330. If the condition persists, call Customer Service.
55 MC INIT ERR	The motor controller cannot initialize the carriage.	Power the 1330 off. If the condition persists, call Customer Service.
56 MC DRAG ERR	The motor controller has detected a carriage drag error.	Power the 1330 off. If the condition persists, clean the carriage shafts with alcohol. If the condition still persists, call Customer Service.
57 MC TIMER ERR	The motor controller has detected a timer error.	Power the 1330 off. If the condition persists, call Customer Service.
58 MC INTRF ERR	The motor controller has detected an interface error.	Power the 1330 off. If the condition persists, call Customer Service.
59 MC INV ORDER	The motor controller has detected an invalid order.	Power the 1330 off. If the condition persists, call Customer Service.
5A MC INV PRNT HDR	The motor controller has detected an invalid print header.	Power the 1330 off. If the condition persists, call Customer Service.
5B MC INV LINK HDR	The motor controller has detected an invalid link header.	Power the 1330 off. If the condition persists, call Customer Service.

Message	Definition	Recovery
5D OUT OF MEMORY	There is insufficient memory.	Power the 1330 off. Reduce the ASCII buffer size. If the condition persists, install more memory.
60 BUFFR REPRNT	The 1330 is waiting for you to put it online so that it can begin printing.	Press Start.
61 PA1 RESPONSE	The PA1 function has been selected.	Press Start to send your request to the controller.
62 PA2 RESPONSE	The PA2 function has been selected.	Press Start to send your request to the controller.
63 SEND STATE	The 1330 is waiting for a PA key.	Press Stop, then press PA1 or PA2. See Configuration Options 708 and 709 in Chapter 4.
88 NO RIBBON	The 1330 has sensed that no ribbon is installed.	Install a ribbon.

Appendix B. Programming Notes

The following considerations should be observed in systems applications involving the 1330 printer. For more information, refer to the *IBM 4224/4230 Printer Product and Programming Description Manual,* GC31-2551-3.

Programming in SCS Control Codes (Non-IPDS)

Programming implementation of SCS support is the customer's responsibility. SCS control codes honored by the 1330 are presented below.

Code	EBCDIC (Hex)	Name
CR	OD	Carriage Return
LF	25	Line Feed
NL	15	New Line
BS	16	Back Space
FF	OC	Form Feed
HT	05	Horizontal Tab
VT	OB	Vertical Tab
SHF	2BC1	Set Horizontal Format
SVF	2BC2	Set Vertical Format
SLD	2BC6	Set Line Density
VCS	04	Vertical Channel Select
SA	28	Set Attribute
SPD	2BD2NN29	Set Print Density (CPI)
GE	08	Graphic Escape
TRN	35	Transparent
IRS	1E	Interchange Record Separator
BEL	2F	Bell Function
INP	24	Inhibit Print
ENP	14	Enable Print
PPM	2BD2NN48	Page Presentation Media
STO	2BD1	Set Text Orientation

Set Print Density

A change in the CPI for print SCS datastream requires a corresponding change in the horizontal character density parameter. Control the CPI from the host by using the accepted formatted values listed below.

Formatted Value	CPI
2BD20429000A	10
2BD20429000C	12
2BD20429000F	15
2BD204290010	16.7
2BD204290011	17.1
2BD204290014	20
2BD204290000	Defaults to the last configured CPI or to 10 if none saved
2BD20229	Sets the last saved operator set CPI

Page Presentation Media

Control print quality from the host by using this format:

2BD2NN480000000000000QQ000000

where:

NN:

Hex 02 to hex 0C valid

QQ:

00 – No change

01 – Data Processing Quality/Fast Draft (see 3270 option 206)

02 – Data Processing Text Quality

03 – Near Letter Quality

FF – Use last saved operator-set print quality

Print quality is also selected by 2124-2E escape codes. The current setting is determined by the last command sent.

Using Host Controlled Color/Highlighting/Symbol Set

Color printing, highlighting, and symbol set selection can be set by one of the following kinds of attribute bytes in a datastream.

LU1 Mode

284XXX Attributes

In SCS mode, the 284XXX-type attribute can be used to specify color, symbol set, and highlighting selection for the 1330. The byte values below are given in EBCDIC hexadecimal code.

Value	Attribute
284100	No underline
2841F1	No underline
2841F2	No underline
2841F4	Underline
284200	Black
2842F1	Blue
2842F2	Red
2842F3	Magenta
2842F4	Green
2842F5	Cyan
2842F6	Yellow
2842F7	Multicolor or black
284300	Base font
2843F1	APL/Text character set
284340-EF	LCID associated with loaded programmed symbol set

LU3 Mode

Field Attributes

For all field attributes, if the base color is disabled, the field attribute color is black or green, according to the printer configuration.

Binary Buffer Code	Field Attributes
11-- 11--	Nonprint
11-- 00 --	Print
11-- 01--	Print
11-- 10--	Print
110-- 00--	Black+ green**
110-- 01--	Black+ green**
110-- 10--	Red
111-- 00--	Blue
111-- 01--	Blue
111-- 10--	Green+ black**

+ Base color black
**Base color green

Extended Field Attributes

Bits	Values	Notes
0-1	00 = No underline	
	01 = No underline	
	10 = No underline	
	11 = Underline the character	
2-4	000 = Default to base field attribute color	
	001 = Blue	
	010 = Red	
	011 = Magenta	Black if accent ribbon
	100 = Green	
	101 = Cyan	Black if accent ribbon
	110 = Yellow	Black if accent ribbon
	111 = Multicolor (if printing a triple plane programmed symbol set)	Black in 4224/4230 Emulation mode
5-7	000 = Base character set	
	001 = APL/Text character set	
	010 = PSS 2 selected	Invalid in 4224/4230 Emulation mode
	011 = PSS 3 selected	Invalid in 4224/4230 Emulation mode
	100 = PSS 4 selected	Invalid in 4224/4230 Emulation mode
	101 = PSS 5 selected	Invalid in 4224/4230 Emulation mode
	110 = PSS 6 selected	Invalid in 4224/4230 Emulation mode
	111 = PSS 7 selected	Invalid in 4224/4230 Emulation mode

Character Attributes

Bits	Values	Notes
0 and 1	00 = Default to Bits 0 and 1 in the extended field attribute	
	01 = No action	
	10 = No action	
	11 = Underline the character	
2, 3, and 4	000 = Default to Bits 2, 3, and 4 in the extended field attributes for color selection,	
	001 = Blue	
	010 = Red	
	011 = Magenta	Black if accent ribbon
	100 = Green	
	101 = Cyan	Black if accent ribbon
	110 = Yellow	Black if accent ribbon
	111 = Multicolor (if printing a triple plane programmed symbol set)	Black in 4224/4230 Emulation mode
5, 6, and 7	000 = Default to Bits 5, 6, and 7 in the extended field attribute for character set selection,	
	001 = APL/Text character set	
	010 = PSS 2 selected	Invalid in 4224/4230 Emulation mode
	011 = PSS 3 selected	Invalid in 4224/4230 Emulation mode
	100 = PSS 4 selected	Invalid in 4224/4230 Emulation mode
	101 = PSS 5 selected	Invalid in 4224/4230 Emulation mode
	110 = PSS 6 selected	Invalid in 4224/4230 Emulation mode
	111 = PSS 7 selected	Invalid in 4224/4230 Emulation mode

Programming in IPDS Data Stream

Initialization Defaults

When the 1330 is powered on, IPDS parameters are set to their initialization default values. These values remain in effect until they are overridden by specific datastream commands from the host application program.

IPDS initialization default values for the 1330 are as follows.

Default	Description	Value (Hex)	Notes
L-units base value	10 inches	00	
X l-units per base	Decimal 14400 per 10 inches	3840	
Y l-units per base	Decimal 14400 per 10 inches	3840	
Width of physical page	MPP value, op panel selection		
Length of physical page	MPL value, op panel selection		
Width of logical page in l-units X-extent	Decimal 13.2-inch width, 1440 units per inch	4A40	
Length of logical page in l-units Y-extent	Decimal 11-inch length, 1440 units per inch	3DE0	
Ordered data flags	Unordered page/block/text flags	00	
X-axis orientation	0 degrees	0000	
Y-axis orientation	90 degrees	2D00	
Current I text position		0000	
Current B text position	Default font type baseline	00A0	Text printing on line 1 requires an initial Y-displacement value of 00A0.
X-displacement	Logical page X-displacement from physical page origin	0000	
Y-displacement	Logical page Y-displacement from physical page origin	0000	
Initial inline margin in l-units		0000	
Intercharacter adjustment		0000	
Baseline increment	Offline op panel selection, based on LPI setting		

Default	Description	Value (Hex)	Notes
Local font ID		FF	When local font ID = FF is used, the latest inline sequence established in either Set Text Orientation (STO) or Load Page Descriptor (LPD) is used to determine whether to print left to right or right to left. Left to right is the default.
Text color	Black		
Code page ID	Language selection from offline op panel		
Font quality	Print quality selection from offline op panel		
Font type	Determined by print quality and CPI selections from offline op panel		For Data Processing Quality, the default font is Gothic. For Data Processing Text Quality and Near Letter Quality, the default font is Courier.
Exception handling control	Report undefined characters, position checks, and all other exceptions. Do not take alternate exception action. Terminate, print page, and go to home state.		

Command Format

All 1330 commands use the following format:

Length/Command/Flag/Correlation ID (Optional)/Data

The following table shows the purpose of each field.

Byte	Field	Description
0-1	Length	Total command length, including length bytes
2-3	Command	Command type
4	Flag	Bit 0 0 = Acknowledge response not required 1 = Acknowledge response required Bit 1 0 = Correlation ID not included 1 = Correlation ID included Bit 2 0 = Acknowledge reply response is complete 1 = Second buffer of XOH-OPC reply required Bits 3-6 Reserved (always zero) Bit 7 Persistent Nack
5-6	Correlation ID	Identifier name (valid only if Byte 4, Bit 1 is ON)
7-n	Data	Specific subcommands, operands, parameters, and/or data fields as appropriate for the given command

Note 1: Bit numbering follows the EBCDIC standard, with Bit 0 being the most significant bit.

Note 2: If the Correlation ID field is not present (Byte 4, Bit 1 is 0), the data field starts at Byte 5 rather than at Byte 7.

Note 3: Both positive and negative values in the data fields are allowable. Negative values are in twos-complement form.

Note 4: Some bytes or bits in the data fields are reserved. The printer does not always check the contents of these fields. However, it is recommended that such fields equal the specified value (if one exists) or zero.

Note 5: The 1330 will not detect a condition where the specified command length (Bytes 0-1) exceeds the actual number of bytes received. If this occurs, the printer will not process the command until it receives the specified number of bytes.

Note 6: If the host wants to request the second buffer, the request must be the next command following the request for the first buffer of an acknowledgment. However, it is not required that the host request the second buffer of an acknowledgment.

IPDS Command Codes

The IPDS function sets supported by the 1330 include the following:

- Device Control function set
- Text function set
- Image function set
- Graphics function set
- Bar Code function set
- Overlay function set
- Page Segment function set
- Loaded Font function set

Device Control Function Set Commands

The Device Control function set contains the commands used to set up the page, communicate device controls, and manage the Acknowledge protocol. The Device Control function set commands are:

Command	Code	Description
NOP	D603	No Operation
STM	D6E4	Sense Type and Model
SHS	D697	Set Home State
ACK	D6FF	Acknowledge Reply
LCC	D69F	Load Copy Control
LPP	D66D	Load Page Position
LPD	D6CF	Load Page Descriptor
BP	D6AF	Begin Page
EP	D6BF	End Page
END	D65D	End
XOH	D68F	Execute Order Home State
XOA	D633	Execute Order Any State

Text Function Set Commands

The Text function set contains the commands and data controls for presenting text information on a logical page, page segment, or overlay area on a physical page. The Text function set commands are:

Command	Code	Description
LFE	D63F	Load Font Equivalence
LE	D61D	Load Equivalence
WT	D62D	Write Text

Image Function Set Commands

The Image function set contains the commands and data controls for presenting image data on a logical page, page segment, or overlay area on a physical page. The Image function set commands are:

Command	Code	Description
WIC	D63D	Write Image Control
WI	D64D	Write Image
END	D65D	End

Graphics Function Set Commands

The Graphics function set contains the commands and data controls for presenting graphics pictures on a logical page, page segment, or overlay area on a physical page. The Graphics function set commands are:

Command	Code	Description
WIC	D63D	Write Image Control
WI	D64D	Write Image
END	D65D	End

Graphics is a data type the 1330 uses to present line art drawings in a graphics block area on a page. A sequence of drawing orders produces arcs, lines, fillets, character strings, markers, and other elements to define the drawing. These orders, grouped into one or more segments, present the picture.

The controller sends a Write Graphics Control command to the printer to establish the control parameters and initial drawing conditions for presenting the picture data. The picture segments themselves are sent to the printer as data in one or more Write Graphics commands.

Bar Code Function Set Commands

The Bar Code function set contains the commands and controls for presenting bar code information on a logical page, page segment, or overlay area on a physical page. The Bar Code function set commands are:

Command	Code	Description
WBCC	D680	Write Bar Code Control
WBC	D681	Write Bar Code
END	D65D	End

Overlay Function Set Commands

The Overlay function set contains the commands used to store, delete, and present information in the overlay memory of the printer. These commands are independent of any specific data types used in defining the overlay.

The overlay is contained between the BO (Begin Overlay) command and the EP (End Page) command and cannot contain itself. Overlays can be nested – that is, overlays can contain other overlays. The depth of the overlay nesting cannot exceed five levels.

The Overlay function set commands are:

Command	Code	Description
BO	D6DF	Begin Overlay
DO	D6EF	Delete Overlay
IO	D67D	Include Overlay

Page Segment Function Set Commands

The Page Segment function set contains the commands used to store, delete, and present information in the page segment memory of the printer. These commands are independent of any specific data types defining the page segment. The Page Segment function set commands are:

Command	Code	Description
BPS	D65F	Begin Page Segment
DPS	D66F	Delete Page Segment
IPS	D67F	Include Page Segment

Loaded Font Function Set Commands

The Loaded Font function set contains the commands used to download and delete font information from the font storage of the printer. The Loaded Font function set commands are:

Command	Code	Description
LSS	D61E	Load Symbol Set
DF	D64F	Delete Font

Using Escape Sequences in 3270 Mode

In a multiuser environment, several programs or display stations may require special printing formats. It is possible to vary printed output by sending 2124 escape sequences to the 1330 in the datastream. The requirement to reset parameters from the 1330 operator control panel is therefore eliminated.

A 1330 printer escape sequence consists of an escape character and an escape code.

- The *escape character* alerts the 1330 to expect an escape code. This appendix provides instructions for setting the escape character from the operator control panel. Check with your system manager for the correct escape character to use.
- *Escape codes* give the 1330 specific instructions to change a parameter, such as font, number of lines, or characters per inch. During printing, escape codes in the datastream take priority over parameters set from the control panel. In addition, the 1330 provides escape codes to vary character style, including italicizing, bolding, underlining, and elongation.

An escape sequence is structured as shown below.

Escape Sequence (entered with the text at the display station):

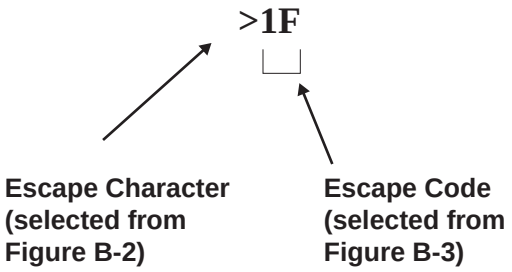


Figure B-1. Escape Sequence Structure

Escape sequences can be linked to get the desired combination of print format and style. For example, the string >81>89>8C provides near letter quality at 12 characters per inch (CPI) and 3 lines per inch (LPI).

Selecting the Escape Character

The code that alerts the 1330 to expect an escape sequence is called the escape character. The escape character must be set from the 1330 Operator Control Panel keypad. Choose a character that is available on your display terminal keyboard, and that you would not use in day-to-day printing operations.

Note: A character, once selected to be an escape character, will be nonprintable. For this reason, the escape character should be one that is never otherwise used.

Refer to the table in Figure B-2 to find the escape character you want to use. (Note that symbols in this table are for reference only.) Then enter the decimal number corresponding to this character in the printer's memory by using Configuration Option 503, 2124 Escape Character. First, however, follow the instructions under "Getting Started," immediately following.

Getting Started

Before you set the escape character, use Configuration Option 501, Printer Emulation Mode, to enable the 1330 to support 2124-2E escape codes.

Note: For more information on the 1330 configuration procedure, refer to Chapter 4 of this manual.

1. Press the Stop key, if the printer is ready.
2. Enter Menu mode by pressing the Option key.
3. Select Option 501.
4. Press the Left Arrow or Right Arrow key until 3 (2124) is displayed.
5. Press the Save key to store this choice.

008	>	039	7	070	õ	101	Ã	132	e	163	D
009	<	040	8	071	ÿ	102	Õ	133	f	164	E
010	[	041	9	072	à	103	Y	134	g	165	F
011	]	042	ß	073	è	104	A	135	h	166	G
012	)	043	§	074	é	105	E	136	i	167	H
013	(	044	#	075	ì	106	E	137	j	168	I
014	}	045	@	076	ò	107	I	138	k	169	J
015	{	046	%	077	ù	108	O	139	l	170	K
016	SP	047	_	078	ü	109	U	140	m	171	L
017	=	048	&	079	ç	110	Y	141	n	172	M
018	'	049	-	080	ä	111	C	142	o	173	N
019	”	050	.	081	ë	112	Ä	143	p	174	O
020	/	051	,	082	ï	113	Ë	144	q	175	P
021	\	052	:	083	ö	114	Ï	145	r	176	Q
022	|	053	+	084	ü	115	Ö	146	s	177	R
023		054	¬	085	â	116	Ü	147	t	178	S
024	?	055	–	086	ê	117	Â	148	u	179	T
025	!	056	•	087	î	118	Ê	149	v	180	U
026	$	057		088	ô	119	Î	150	w	181	V
027	¢	058	^	089	û	120	Ô	151	x	182	W
028	£	059	~	090	á	121	Û	152	y	183	X
029	¥	060	¨	091	é	122	Á	153	z	184	Y
030	Pts	061	`	092	í	123	É	154	æ	185	Z
031	¤	062	´	093	ó	124	Í	155	ø	186	Æ
032	0	063	,	094	ú	125	Ó	156	å	187	Ø
033	1	064	à	095	ñ	126	Ú	157	ç	188	Å
034	2	065	è	096	À	127	Ñ	158	;	189	Ç
035	3	066	ì	097	È	128	a	159	*	190	;
036	4	067	ò	098	Ì	129	b	160	A	191	*
037	5	068	ù	029	Ò	130	c	161	B		
038	6	069	ã	100	Ù	131	d	162	C		

Figure B-2. Table for Selecting Escape Character

Setting the Escape Character

To set the escape character:

1. Press the Stop key, if the printer is ready.
2. Enter Menu mode.
3. Select Option 503.
4. Press the Left Arrow or Right Arrow key until the number of the escape character you want is displayed. Refer to Figure B-2.
5. Press the Save key to activate this escape character, and press Stop to quit.

To display the number of the escape character, follow Steps 1 through 3.

Final Step

Finally, use Configuration Option 804, APA Print Direction, in Chapter 4 for better bar code registration.

1. Press the Stop key.
2. Enter Options mode.
3. Select Option 804.
4. Press the Left Arrow or Right Arrow key until 1 is displayed.
5. Press the Save key to store this choice. The printer will now print unidirectionally.

Selecting Escape Codes

Select escape codes from Figure B-3, and type in the required escape sequence combinations. Always use the escape character and the code 1F at the beginning and end of a file to clear the 1330 to normal character style. Escape code 1F resets escape codes 10 through 1E, and assures that italic, boldface, underlined, or elongated characters set by another operator will not affect your printed output.

Escape codes 30 through 39 are used in printing bar codes. When escape code 32 is used, the bar code type is dependent on the interface used.

Helpful Information for Using Escape Sequences

- The codes 10, lC, lD, and 1E have a toggle function. The first entry turns on the function, and the second entry turns it off.
- A carriage return control code should precede sequences 8C through 90. If it doesn't, the 1330 automatically inserts its own carriage return, which may produce an undesirable printed result.
- Using proportional spacing may cause unpredictable results, because the characters per inch (CPI) cannot be measured.
- Under LU1, escape code functions will affect print quality, CPI, LPI, and underline in the same way as SCS control codes.
- Powering off and on the 1330 will change the escape sequence settings back to the parameter settings selected from the operator control panel.
- Changing parameters from the operator control panel while a print job using datastream escape sequences is in progress is not recommended. Wait until printing stops, and then retransmit the desired escape sequences.
- When you want to turn off the italic function in the middle of a line, insert an italic blank space after the last italic character in the string, before the escape sequence that turns off the italic function. Inserting a blank allows space for the forward slant of the last character. Without the space, the character may not be printed completely. It is not necessary to insert an italic blank at the end of a line.

Code	Affected Parameter	Notes
10	Set italic	Italic space must follow last italic character, except at end of line (EOL)
1C	Set boldface	
1D	Set underline	
1E	Set elongated	Each character occupies two character spaces
1F	Set normal	Turns off codes 10-1E
30	No text printed below bar codes	
31	Text printed below bar codes	
32	UPC 8 Characters UPC 13 Characters EAN 8 Characters EAN 13 Characters	
33	2 of 5 Interleaved	
34	2 of 5 Industrial	
35	CODABAR	
36	Modified Plessey	MSI
37	Standard text	
38	Plessey	
39	3 of 9	
80	Select Font 1	Normal character
81	Select Font 2	Near letter quality (NLQ)
82	Select Font 3	Normal character proportional spacing
83	Select Font 4	NLQ proportional spacing
84	Select OCR-B font in NLQ	See Figure B-7
85	Select OCR-A font in NLQ	See Figure B-6
88	Set CPI = 10	
89	Set CPI = 12	
8A	Set CPI = 15	
8B	Set CPI = 17	
8C	Set LPI = 3	
8D	Set LPI = 4	
8E	Set LPI = 6	
8F	Set LPI = 8	
90	Set LPI = 12	

Figure B-3. Escape Codes

Using the Bar Code Feature

Bar code printing is a special feature available on the 1330. For clarity, printed bar codes will be referred to as bar code strips.

Bar codes are printed as the result of data entered in a sequence of steps beginning with an escape character. The procedure outlined below gives the steps necessary to print bar codes.

Scanner Data

The 1330 can print most popular bar codes (see Figure B-4). Scanning devices usually read only one bar code type; therefore, the type of bar code printed is dependent on the scanner in use. Your scanner will also determine the height and width of the bar code strip.

Bar Code Data

The maximum number of printable characters is dependent on the bar code type employed. Data to be printed as bar codes consists of numbers, letters, and mathematical symbols.

Readability

Bar code strips may vary in readability.

Note: You may want to test to find the most readable strip.

Density

You must know where the bar codes and standard text (optional) are to be printed. Bar codes can be printed at 10 or 12 CPI. Setting CPI from 10 to 12 reduces the size of the bar code strip and changes the position of the bar code on the page. A maximum of eight bar codes can be printed per line.

Start Print Positions

You must know how many bar codes are to be printed per page and where the first character of the bar code strip is to be printed.

Height

A standard height for bar codes should be established throughout your organization. Bar codes can be printed in 3, 4, 6, 8, and 12 lines per inch (LPI).

Standard Text

Additional or standard text can be printed between completed bar code strips. To print this text, you must know where the first character of text is to be printed measured from the left margin in 0.1-inch (2.5-mm) units. It should be normal practice to run a test printing to check alignment before loading self adhesive labels.

The text can be printed on bar code stickers. Standard text can contain data to be used internally, such as the title or description of an item.

Bar Code Types

Ten types of bar codes can be printed by the 1330. Figure B-4 lists these bar codes.

Escape Code	Bar Code Type
32*	UPC 8 Characters
32*	UPC 13 Characters
32*	EAN 8 Characters
32*	EAN 13 Characters
33	2 of 5 Interleaved
34	2 of 5 Industrial
35	CODABAR
36	Modified Plessey (MSI)
38	Plessey
39	3 of 9

*UPC and EAN codes are triggered by escape code 32.

Figure B-4. Bar Code Types

Using Bar Code Escape Sequences

The following formats are used to print bar codes. Number 1 includes all parameters (required and optional), and Number 2 includes only required parameters. > = escape character and NL = new line (carriage return plus line feed). NL = hexadecimal 15. The data separator character is a semicolon.

1. Required and optional escape sequence data:

   >XXYYY;bar code data;37PPP;standard text;NLNLNLNLNLNL31

2. Required escape sequence data:

   >XXYYY;bar code data;NLNLNLNLNLNL30

Escape Sequence Format

1. Escape character
2. XX Bar code type

   32 through 36 and 38 through 39 are valid bar code types.

3. YYY Print head position for bar codes

   This parameter is measured in 0.1-inch (2.5-mm) units from the left margin. Field is one to three digits long.

4. ; Data separator character
5. Bar code data

   This data is the symbols to be printed in the bar code strip.

6. ; Data separator character

   Items g through k are optional.

7. 37 Standard Text command

   This is a command triggering the printing of standard text between bar codes.

8. PPP Print head position for standard text

   This parameter is measured in 0.1-inch (2.5-mm) units from the left margin. Field is one to three digits long.

9. ; Data separator character

10. Standard text

    This is the text printed between bar code strips.

11. ; Data separator character

12. NL New line

    The height of the printed bar code characters equals the number of New Line commands multiplied by the reciprocal of the number of lines per inch.

    The new line calculation formula is:

    Ht = (N x 1/LPI)

    where

    Ht = the height of the bar code characters

    N = the number of New Line commands

    LPI = the line density in lines per inch

    LPI can be set via an escape code, at the front panel, or using an SCS character string.

    Figure B-5 lists common bar code heights and the corresponding number of New Line commands required to produce them.

13. Line terminator

    Either 31 or 30 must be used to end the escape sequence string. If multiple bar codes are to be printed from a single bar code escape sequence, Numbers 1 through 11 must be completed with or without standard text before the NL and line terminator is entered. Up to eight bar codes can be printed per page.

Terminator Escape Code	Definition
30	No human readable text printed below bars
31	Bar code human readable text printed below bars

Bar Code Height in Inches	Number of New Line Commands	LPI
1/3	1	3
2/3	2	
1	3	
1 1/3	4	
1 2/3	5	
1/2	2	4
3/4	3	
1	4	
1 1/4	5	
1 1/2	6	
1/2	3	6
2/3	4	
5/6	5	
1	6	
1 1/2	9	
1/2	4	8
5/8	5	
3/4	6	
7/8	7	
1	8	
1 1/2	12	
1/2	6	12
1	12	
1 1/2	13	
2	24	

Figure B-5. Calculating New Line Characters

Note: Short bar code strips demand greater accuracy of the operator during the scanning procedure.

Calculating Checksums

The checksum is a number used to assure the accuracy of the scanning of a bar code.

EAN or UPC

If EAN or UPC bar codes are printed using 7 or 12 characters, the 1330 will calculate the checksum digits. This number (8 or 13) will be printed below the last bar code if 31 is used as the line terminator.

Plessey

If the Plessey bar code type is used, the computer operator must compute the checksum manually and add the value to the escape sequence.

Print Optical Character Reader Parameter

The 1330 prints two machine readable character sets in addition to bar codes. These sets are OCR-A and OCR-B. Character dimensions are determined by international standards programmed into the printer. All characters are printed in near letter quality font at 10 or 12 CPI.

The default setting is **O** (OFF). To enable OCR-A, use escape sequence 85. To enable OCR-B, use escape sequence 84.

The character sets are shown in Figures B-6 and B-7. The procedure to print OCR-A characters from the terminal is:

1. Send the 10 CPI or 12 CPI escape sequence.
2. Send the near letter quality escape sequence.
3. Send escape sequence 85.
4. Start printing.

To print OCR-B, substitute 84 for 85 in Step 3.

Hex Digits	4-	5-	6-	7-	8-	9-	A-	B-	C-	D-	E-	F-
-0		&	-	-	ø	-	-	-	{	}	\	0
-1	-	-	/	-	a	j	-	£	A	J	-	1
-2	-	-	-	-	b	k	s	¥	B	K	S	2
-3	-	-	Ä	-	c	l	t	-	C	L	T	3
-4	-	-	-	-	d	m	u	-	D	M	U	4
-5	-	-	-	-	e	n	v	-	E	N	V	5
-6	-	-	-	-	f	o	w	-	F	O	W	6
-7	-	-	Å	—	g	p	x	-	G	P	X	7
-8	-	-	-	-	h	q	y	-	H	Q	Y	8
-9	-	-	Ñ	-	i	r	z	-	I	R	Z	9
-A	[	]	-	:	-	-	-	-	-	-	-	-
-B	.	$	¬	#	-	-	-	|	H	J	Y	-
-C	<	*	%	@	-	-	-	-	-	-	Ö	Ü
-D	(	)	-	'	-	-	-	-	-	-	-	-
-E	+	;	>	=	-	Æ	-	-	-	-	-	-
-F	!	-	?	"	-	-	-	■	-	^	-	

Figure B-6. OCR-A Character Set

Hex Digits	4-	5-	6-	7-	8-	9-	A-	B-	C-	D-	E-	F-
-0		&	–	ø	Ø	–	–	–	{	}	\	0
-1	–	–	/	–	a	j	~	£	A	J	–	1
-2	–	–	–	–	b	k	s	¥	B	K	S	2
-3	ä	–	Ä	–	c	l	t	–	C	L	T	3
-4	–	–	–	–	d	m	u	–	D	M	U	4
-5	–	–	–	–	e	n	v	§	E	N	V	5
-6	–	–	–	_	f	o	w	–	F	O	W	6
-7	§	–	Å	—	g	p	x	–	G	P	X	7
-8	–	–	–	–	h	q	y	–	H	Q	Y	8
-9	–	ß	Ñ	`	i	r	z	–	I	R	Z	9
-A	[	]	–	:	–	–	–	–	–	–	–	–
-B	.	$	,	#	–	–	–	|	–	–	–	–
-C	<	*	%	à	–	æ	–	–	ö	ü	ö	Ü
-D	(	)	_	'	–	,	–	"	–	–	–	–
-E	+	;	>	=	ij	Æ	–	'	–	–	–	–
-F	!	^	?	"	IJ	¤	–	■	–	^	–	

Figure B-7. OCR-B Character Set

1330 Commands in ASCII Mode

The remaining pages of this appendix list the programming commands supported by the ASCII interface of the 1330 Printer in its emulation modes:

- IBM Proprinter III
- IBM Proprinter III XL

For more programming information, refer to these manuals:

- *IBM Proprinter III and Proprinter III XL Guide to Operations*, SA34-2065-1.
- *IBM Proprinter Family Technical Reference*, SC31-2587-3.

Using Proprinter Commands in ASCII Mode

The following sections of this appendix summarize the commands supported by the 1330's Proprinter emulation.

If you are using an application program (word processor, spreadsheet, or windows program), specify your printer as an IBM Proprinter when you install your software.

To select enhanced text functions outside of your application program, your host computer will need to send commands (and data) to the printer via the interface. To exercise this capability, you will need a working knowledge of BASIC* (or an equivalent language). For example, within BASIC an LPRINT statement can be used to send a command (or commands) to the printer. Refer to your host computer manual or to a programmer's manual for additional information.

*Microsoft BASIC is a trademark of Microsoft Corporation.

Print Mode Commands

The characteristics of the printed output, or print mode, are changed by the commands listed below. The default print mode will take effect when the power is turned on or when a selected print mode is reset.

The first two tables list the available print mode commands and their functions. Each function below is effective until reset with another command.

Note: Double high characters require a Forms Handler module. The standard PC character set will be selected by default if the Forms Handler module is not installed.

Function	Code	Decimal	Hex
Set Double Width by Line	SO	14	OE
Set Double Width (Multiple Lines)	ESC W 1	27 87 01	1B 57 01
Reset Double Width	DC4 LF FF CR VT ESC W 0	20 10 12 13 11 27 87 00	14 OA OC OD OB 1B 57 00
Set 12 CPI Printing	ESC :	27 58	1B 3A
Set 15 CPI Printing	ESC m	27 109	1B 6D
Set Condensed (17.1 CPI)	SI	15	OF
Reset to 10 CPI	DC2	18	12
Set Emphasized (See Note 1)	ESC E	27 69	1B 45
Reset Emphasized	ESC F	27 70	1B 46
Set Underline	ESC-1	27 45 01	1B 2D 01
Reset Underline	ESC-0	27 45 00	1B 2D 00
Set Superscript	ESC S 0	27 83 00	1B 53 00
Reset Superscript	ESC T	27 84	1B 54
Set Subscript	ESC S 1	27 83 01	1B 53 01
Reset Subscript	ESC T	27 84	1B 54
Set Overscore	ESC_1	27 95 01	1B 5F 01
Reset Overscore	ESC_0	27 95 00	1B 5F 00
Set Double Strike	ESC G	27 71	1B 47
Reset Double Strike	ESC H	27 72	1B 48
Cancel Automatic Perforation Skip	ESC O	27 79	1B 4F
Deselect Printer as Proprinter III	ESC Q 3	27 81 03	1B 51 03
Deselect Printer as Proprinter III XL	ESC Q 22	27 81 22	1B 51 16
Select Character Set 2	ESC 6	27 54	1B 36
Select Character Set 1 (Default Character Set on Power-On)	ESC 7	27 55	1B 37
Double High Printing (See Note 2)	ESC [@n1n2m1m2m3m4	27 91 64 n1n2m1m2m3m4	1B 5B 4O n1n2m1m2m3m4
Select Color	ESC r m1	27 114 m1	1B 72 m1

Print Mode Commands

Note 1: Emphasized printing is effective only in pica pitch.

Note 2: n1n2 specifies the number of mode bytes.
m1m2 must be 0.
m3 controls line spacing and character height.
m4 controls character width.

Double high characters require a Forms Handler module. The standard PC character set will be selected by default if a Forms Handler module is not installed.

Note 3: For the m1 parameters used in Select Color, refer to "Miscellaneous Commands," later in this chapter.

Horizontal Movement Commands

The horizontal movement of the print head is controlled by the commands listed below.

Function	Code	Decimal	Hex
Set Carriage Return	CR	13	OD
Set Backspace	BS	08	08
Proportional Space Mode Start	ESC P 1	27 80 01	1B 50 01
Reset Proportional Space	ESC P 0	27 80 00	1B 50 04
Set Elite Pitch (12 CPI)	ESC:	27 58	1B 3A
Set 15 CPI	ESC m	27 109	1B 6D
Set Condensed (17.1 CPI)*	SI	15	OF
Reset to 10 CPI	DC2	18	12

Horizontal Movement Commands

*The Set Condensed command will print at 20 CPI if you have selected 20 CPI from the front panel (Configuration Option 10). If your front panel CPI selection is other than 20 CPI (that is, 10, 12, 15, or 17.1), the Set Condensed command will print at 17.1 CPI.

Note: The horizontal print position is specified with the ESC $ command at (256n2 + n1) x 1/60 inches from the left margin.

Horizontal Tabbing Commands

Absolute and relative horizontal tab stops are controlled with the commands listed below.

Function	Code	Decimal	Hex
Execute Horizontal Tab	HT	09	09
Set Horizontal Tab Stops	ESC Dn1...nk 0	27 68n1...nk 00	1B 44n1...nk 00
Clear Horizontal Tabs	ESC D 0	27 68 00	1B 44 00
Reset Horizontal Tabs to Power-On State	ESC R	27 82	1B 52

Horizontal Tabbing Commands

Note: (n) specifies the print position. Up to 28 horizontal tab positions can be set, with the first print position as 1.

Vertical Movement Commands

Paper motion is controlled with the commands listed below.

Function	Code	Decimal	Hex
Form Feed	FF	12	OD
Line Feed	LF	10	0A
Line Feed of n/216 Inch (0 to 255/216)	ESC J n	27 74 n	1B 4A n
Set Line Spacing to 1/8 Inch*	ESC 0	27 48	1B 30
Set Line Spacing to n/216 Inch (1/216 to 255/216)*	ESC 3 n	27 51 n	1B 33 n
Set Line Spacing to 7/72 Inch*	ESC 1	27 49	1B 31
Set Line Spacing to n/72 Inch (0 to 85/72)*	ESC A n	27 65 n	1B 41 n
Start Text Line Spacing to ESC A n*	ESC 2	27 50	1B 32
Set Auto Line Feed	ESC 5 1	27 53 01	1B 35 01
Reset	ESC 5 0	27 53 00	1B 35 00
Reverse Line Spacing	ESC j n	27 106 n	1B 6A n

Vertical Movement Commands

*Reset with another line spacing.

Note: Line spacing in n/216 inch (base units value) will adjust the required line spacing to the nearest 1/144 inch.

Note: After receipt of a spacing command, each LF command or equivalent results in the line feed distance specified by the spacing command.

Note: Reverse line spacing moves the paper n/144 inch in reverse and requires that a DOD module be installed. If there is no DOD module, the command is ignored.

Caution

To avoid paper jams, do not use a negative line feed command such as ESC j (n) unless a Forms Handler module is installed. Refer to Chapter 2 for information on installing the Forms Handler module.

Vertical Tabbing Commands

Vertical tab stops to control paper motion are set with the following commands.

Function	Code	Decimal	Hex
Set Top of Form	ESC 4	27 52	1B 34
Execute Vertical Tab	VT	11	OB
Set Vertical Tab Stops	ESC B n1...nk 0	27 66 n1...nk 00	1B 42 n1...nk 00
Reset Vertical Tab	ESC B 0 ESC R	27 66 00 27 82	1B 42 00 1B 52

Vertical Tabbing Commands

Note: Up to 64 vertical tab locations can be set (ESC B).
(nk) is an ASCII character with a binary value between 0 and 254 (ESC B).
Sixty-four vertical tab locations can be set within page length.

Page Formatting Commands

These commands set the left, right, top, and bottom margins.

Function	Code	Decimal	Hex
Set Horizontal Margins (n = left margin, m = right margin)	ESC X n m	27 88 n m	1B 58 n m
Skip Perforation (n = 1 to 255 lines)	ESC N n	27 78 n	1B 4E n
Set Page Length to n Lines (n Between 1 and 127)	ESC C n	27 67 n	1B 43 n
Set Page Length to n Inches (n Between 1 and 22)	ESC C 0 n	27 67 00 n	1B 43 00 n

Page Formatting Commands

Note: The ESC C command clears the vertical tabs and skip.
The ESC N command causes the printer to skip n lines on the current page and advance the paper to the first printline.

		From	To
Right Margin	Pica	Left Margin + 2	80 (with the 80-Column) 132 (with the 132-Column)
	Elite	Left Margin + 3	96 (with the 80-Column) 158 (with the 132-Column)
	Condensed	Left Margin + 4	137 (with the 80-Column) 226 (with the 132-Column)
Left Margin	Pica	0	Right Margin - 2
	Elite	0	Right Margin - 3
	Condensed*	0	Right Margin - 4

Right and Left Margins

*At 20 CPI, the left margin is limited to 255.

Bit Image Graphics Commands

The 1330 can print characters and pictures as a collection of dots. This feature is called bit image printing, and those commands that print bit images are called bit image graphics commands. There are two image modes: 8-dot and 9-dot.

A bit image is structured by a collection of dots arranged in rows and columns. A collection of eight dots sequentially arranged in a column is called a pattern byte. The smallest unit of the bit image is called a pattern element. There are two types of patterns that are determined by the number of dots used in an element: 8-dot and 9-dot elements.

Function	Code	Decimal	Hex
Single Density Image	ESC K n1 n2 p1 p2...pk	27 75 n1 n2 p1 p2...pk	1B 4B n1 n2 p1 p2...pk
Double Density Image	ESC L n1 n2 p1 p2...pk	27 76 n1 n2 p1 p2...pk	1B 4C n1 n2 p1 p2...pk
Double Density and Double Speed Image	ESC Y n1 n2 p1 p2...pk	27 89 n1 n2 p1 p2...pk	1B 59 n1 n2 p1 p2...pk
Quadruple Density Image	ESC Z n1 n2 p1 p2...pk	27 90 n1 n2 p1 p2...pk	1B 5A n1 n2 p1 p2...pk

Bit Image Graphics Commands

Note: (n1) and (n2) specify the number (k) of bytes of graphics data to follow, where k = 256n2 + n1.

p1 p2...pk specifies graphics data.

In 9-Dot Image mode, the printer needs twice the number of bytes per column of data. Therefore, the number of bytes included in the command is twice the number specified by (n1) and (n2).

Font Control and Download Commands

The following commands are download commands. Refer to the *IBM Proprinter III and Proprinter III XL Guide to Operations* for information on how to design and print download characters.

Function	Code	Decimal	Hex
Select Draft Quality (Internal CG Set)	ESC I 0	27 73 00	1B 49 00
Select Draft Quality (Download CG Set)	ESC I 4	27 73 04	1B 49 04
Select 12 CPI (Internal CG Set) (Fast Font)	ESC I 1	27 73 01	1B 49 01
Select 12 CPI (Download CG Set)	ESC I 5	27 73 05	1B 49 05
Select NLQ	ESC I 2	27 73 02	1B 49 02
Select NLQ (Internal NLQ CG Set)	ESC G	27 71	1B 47
Reset NLQ (Internal NLQ CG Set)	ESC H	27 72	1B 48
Select NLQ (Download CG Set)	ESC I 6	27 73 06	1B 49 04
Select NLQ II (Internal CG Set)	ESC I 3	27 73 03	1B 49 03
Select NLQ II (Italic) (Internal CG Set)	ESC I<0B>	27 73 11	1B 49 0B
Select NLQ II (Download CG Set)	ESC I 7	27 73 07	1B 49 07
Select NLQ II (Alternate)(Download CG Set)	ESC I<0F>	27 73 15	1B 49 0F
Define Download Characters	ESC = ct1 ct2 20 n a 0 p1 p2...p11	27 61 ct1 ct2 20 n a 0 p1 p2...p11	1B 3D ct1 ct2 14 n a 0 p1 p2...p11

Font Control and Download Commands

Note: (ct1) and (ct2) specify the number (k) of character codes to be defined, where 256ct2 + ct1 = 13k + 2.

(a) refers to the attribute byte. Setting Bit 7 = 0 specifies the top 8 print wires. Setting Bit 7 = 1 specifies the bottom 8 print wires. Bits 4 through 6 specify the starting column(s), where (0<s<7). Bits 0 through 3 specify the ending column (e), where s + 4<e<11.

(a), (0), and (p1 p2...) must be repeated for each character code being redefined.

Character Set Selection Commands

Character set selection commands are listed below.

Function	Code	Decimal	Hex
Select PC Character Set 1	ESC 7	27 55	1B 37
Select PC Character Set 2	ESC 6	27 54	1B 36
Print Continuous from All Character Set	ESC \ n1 n2	27 92 n1 n2	1B 5C n1 n2
Print One Character from All Character Set	ESC^	27 94	1B 5E

Character Set Selection Commands

Note: (n1) and (n2) specify the number (n) of characters to be printed from the all character set, where n = 256n2 + n1.

Language Set Selection Commands

A language set selection command is listed below.

Function	Code	Decimal	Hex
Select Operator Language	ESC [<BEL> n1 n2 L m1	27 91 07 n1 n2 76 m1	1B 5B 07 n1 n2 4C m1

Language Set Selection Commands

Note: n1 and n2 specify the number (n) of parameters that follow, where n = 256n2 + n1. For most language selections n1 = 02 and n2 is always 00.

L specifies the use of the operator panel language selection, which is based on Configuration Option 201 (Chapter 5 of this manual).

m1 specifies the language option to be used (Configuration Option 201). For example, m1 = 02 selects the PC Multilingual Character Set.

Set Initial Condition Commands

A set initial condition command is listed below.

Function	Code	Decimal	Hex
Set Initial Condition	ESC[Kn1n2 init id parm1 parm2	27 91 75 n1 n2 init id parm1 parm2	1B 5B 4B n1 n2 4C m1

Set Initial Condition Commands

n1 and n2

n1 and n2 specify the number (n) of bytes of data following and including the init byte. n1 is 1, 3, or 4, and n2 is always 0.

init

init determines which initialization should be performed. The printer supports six values: 0, 1, 4, 5, 254, and 255. The definition of each init value is as follows:

00 Printer is initialized to the user-defined settings which include CPI, LPI, MPP, MPL, left margin, single or double space, and print quality. The download font is not cleared.

01 Printer is initialized to the user-defined settings which include CPI, LPI, MPP, MPL, left margin, single or double space, and print quality. All download fonts are cleared and the language is initialized to user-defined settings (Option 201).

04 Printer is initialized to the factory default settings which include CPI, LPI, MPP, MPL, left margin, single or double space, and print quality. The download font is not cleared, but the download selection is reset to the resident font selection.

05 Printer is initialized to the factory default settings which include CPI, LPI, MPP, MPL, left margin, single or double space, and print quality. All download fonts are cleared and the language is initialized to factory default settings.

254 When you specify a value of 254, the printer is initialized the same way as if you specify an init value of 01. However, the results of this initialization are saved in storage and become the user-defined settings.

255 When you specify a value of 255, the printer is initialized the same way as if you specify an init value of X 05. However, the results of this initialization are saved in storage and become the user-defined settings.

Note: init values that are not supported are treated as if they were init values of 00. Do not use init values 254 and 255 unless you are setting up the printer for the first time.

id

This byte specifies the printer for which the following device-dependent parameter bytes are intended. If the ID does not address your printer, the parameter bytes that follow are ignored. The IDs supported by this printer are 3 (X'03') or 22 (X'16').

parm1/parm2

parm1 and parm2 are currently reserved for future development. They perform no operation in the printer.

parm2

Bit	On	Off
7 Discard byte	Ignore this byte	Process this byte
6 Switch from USA font to Multilingual font	Use multilingual font	Use USA font
5 Bidirectional NLQ (10 CPI)	Unidirectional	Bidirectional (10 CPI only)
4 Reserved		
3 Select NLQ	NLQ key Selects NLQ font	NLQ key Selects NLQ II font.
2 Form feed enable	Ignore form feed from host when printer is at top of form	Honor form feed
1 Line length	8.0-inch paper	13.6-inch paper
0 Reserved		

Miscellaneous Commands

Miscellaneous commands are listed below.

Function	Code	Decimal	Hex
Bell	BEL	7	07
Cancel	CAN	24	18
Unidirectional Printing	ESC U 1	27 85 01	1B 55 01
Reset	ESC U 0	27 85 00	1B 55 00
Select Color*	ESC r m1	27 114 m1	1B 72 m1

Miscellaneous Commands

*For Select Color, m1 has the following values:

Value of m1	4-Color Ribbon	Subtractive Ribbon
0	Black	Black (default)
1	Black	Magenta
2	Black	Cyan
3	Blue	Blue
4	Black	Yellow
5	Red	Red
6	Green	Green

Parameters for Select Color

If a monochrome ribbon is installed, the system will accept any parameter choice, but the printing will be monochrome.

Using TI-810 Command Functions in ASCII Mode

The commands listed in this section are operational when the printer is in TI-810 emulation.

Symbol	Hex Value	Description
NUL	00	Null is used to terminate the Set VT (ESC B) and Set HT (ESC D) strings
BEL	07	Sound the alarm for a single beep
BS	08	Backspace
HT	09	Horizontal tab
LF	0A	Line feed
VT	0B	Vertical tab
FF	0C	Form feed
CR	0D	Carriage return
DC1	11	Select printer
DC2	12	Tab to line
DC3	13	Deselect printer
DC4	14	Tab to address
ESC	1B	Escape

Escape Command Strings

Format: <ESC><Command String>

Command Code	Hex Value	Number of Parameters	Descriptions
1	31	n	Vertical tab set
2	32	1	Form length set
3	33	n	Horizontal tab set
4	34	0	To 6 LPI
5	35	0	To 8 LPI
6	36	0	To 10 CPI
7	37	0	To 17.1 CPI
:	3A	1	Set MPP
;	3B	0	Restore default MPP
m	6D	0	To 15 CPI
r	72	1	Select color*

*For Select Color parameters, refer to “Miscellaneous Commands,” above.

The 1330 does not support the Denmark/Norway, United Kingdom, Germany, and Sweden/Finland languages under TI-810 emulation.

The vertical format functions such as recall, store (<ESC>9, <ESC>8), and the delete command, are not available.

Using Escape Sequences with ANSI Bar Codes

ANSI bar code processing on the 1330 in ASCII mode is based on ANSI version X3.64-1979. The ANSI bar code is made up of three programming elements (or commands) as follows:

1. Set Attributes – The set attributes command tells the printer what type of bar code to produce, determines the height of the bar code, and turns the human readable indicator on or off.

Command Format: <ESC>[<BC Type>;<BC Height>;<HRI>;}

where:

<ESC>	=	HEX <1B> or Decimal <27>
[	=	HEX <5B> or Decimal <91>
<BC Type>	=	0 – 2 of 5 Interleaved
		4 – Code 3 of 9
		5 – EAN-8
		6 – EAN-13
		13 – UPC-A
		14 – UPC-E (not supported)
;	=	HEX <3B> or Decimal <59>
<BC Height>	=	n/12 inches
;	=	HEX <3B> or Decimal <59>
<HRI>	=	0 Turn Human Readable Code OFF
		1 Turn Human Readable Code ON
;	=	HEX <3B> or Decimal <59>
}	=	HEX <7D> or Decimal <125>

2. Activate Bar Code – The activate bar code command starts the printer processing the following data as bar code characters.

Command Format: <ESC>[3t
where:

<ESC>	=	HEX <1B> or Decimal <27>
[	=	HEX <5B> or Decimal <91>
3	=	HEX <33> or Decimal <51>
t		HEX <74> or Decimal <116>

3. Deactivate Bar Code – The deactivate bar code command tells the printer to stop processing bar code data.

Command Format: <ESC>[0t
where:

<ESC>	=	HEX <1B> or Decimal <27>
[	=	HEX <5B> or Decimal <91>
3	=	HEX <33> or Decimal <51>
t		HEX <74> or Decimal <116>

Bar code data must follow the specifications of the bar code type selected. Spaces and commas are processed as delimiters, not as bar code characters. As per the ANSI X3.64-1979 documentation, all bar codes will be preceded and followed by 1/4 inch of white space.

The delimiters (space and comma) are processed as follows:

Space: A space will position the print head one character position to the right of the current head position, based on the current CPI selected. If the space occurs as a break in the bar code datastream, an additional 1/2 inch of space is added to the spacing of the accumulated spaces. (For example, at 10 CPI, ten spaces will position the print head one inch to the right of its current position. If the ten spaces are used as a break between bar codes, the print head will position 1.5 inches to the right of its current position.)

Comma: A comma will cause a break in the bar code data. The break will cause the print head to be positioned 1/2 inch to the right of its current position. Consecutive commas embedded in a bar code datastream will be treated as one break (or as if only one comma were encountered in the bar code datastream).

The bar code height determines the number of linefeeds that are required to process the bar code printout. Therefore, the number of linefeeds that follows the ANSI escape code is crucial for the entire bar code to be printed. If the bar code height is one inch, then at 6 LPI it will take six linefeeds to process the bar code printout. The number of linefeeds required is determined by the expression LF = n/12 (LPI) without human readable and plus one or two linefeeds with human readable, where n equals the bar code's height parameter.

Example: Printing a "Code 3 of 9" bar code 1/2 inch high without human readable code using the data "3 of 9."

<ESC>[4;6;0;}<ESC>[3t 3 of 9 <ESC> [0t<CR><LF><LF><LF>

Text data may be processed with the ANSI bar code data. Text data that is contained on the same line as the bar code commands will be processed as follows:

Leading text data will be processed from the left margin as normal. The bar code will start 1/4 inch from the last text character processed in the leading text data. (This includes spacing as text data.) Trailing text that follows the bar code commands will start 1/4 inch after the last bar code character processed. Any additional lines of text data will be treated as normal text printing along with the bar code.

Note: All ANSI bar codes will start the top of the bar code on the same line that the Activate Bar Code command is found.

Caution

Text that occurs adjacent to the bar code, but is not on the same line as the bar code command, can overprint the bar code if spacing is not provided for positioning data beyond the bar code.

Example: Printing a “Code 3 of 9” bar code 1/2 inch high without human readable code using the data “3 of 9” as the bar code with three lines of text adjacent to the bar code. One line of text will be on the same line as the bar code command and two lines will follow that complete the processing of the bar code printout.

Data before <ESC>[4;6;0;}<ESC>[3t 3 of 9 <ESC>[0t Data after <CR> <LF>
Line 2<CR><LF>
Line 3<CR><LF>

Appendix C. Character Sets

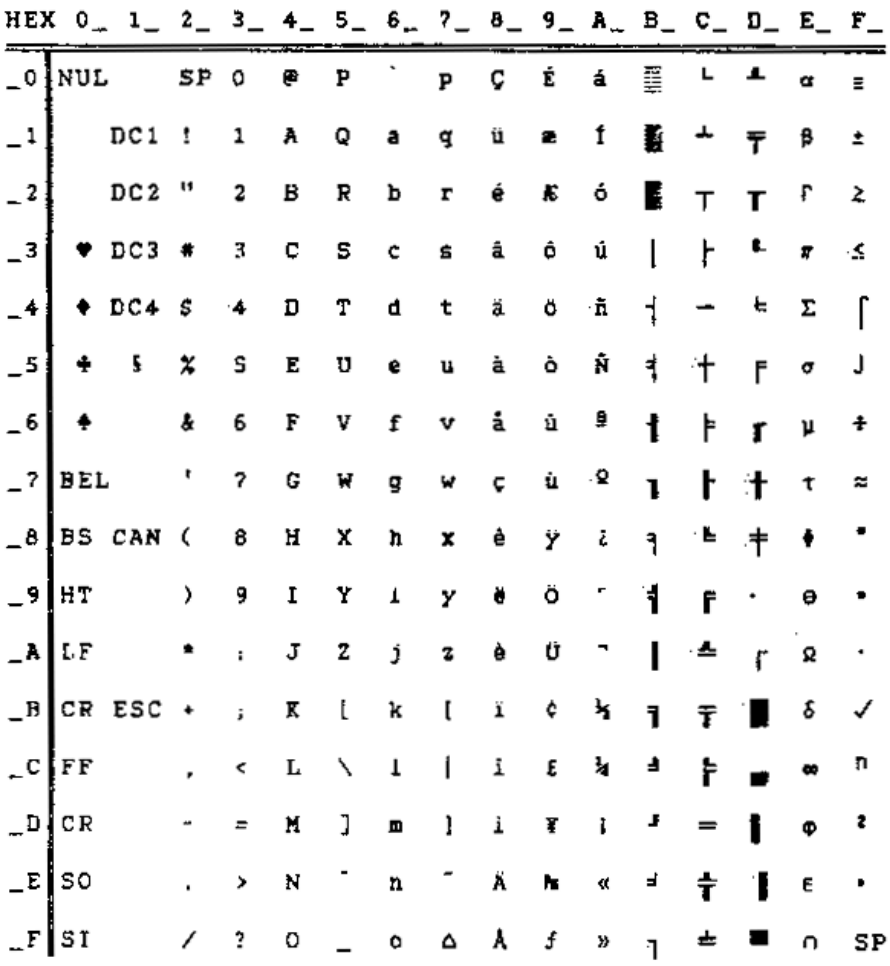
The following tables show the character sets used by the 1330 in ASCII mode. The characters in each of these sets can be printed in Draft, DP Text, and NLQ.

PC CHARACTER SET 1

HEX	0_	1_	2_	3_	4_	5_	6_	7_	8_	9_	A_	B_	C_	D_	E_	F_
_0	NUL		SP	0	@	P	`	p	NUL		á	▒	└	╨	α	≡
_1		DC1	!	1	A	Q	a	q		DC1	í	▓	┴	╤	β	±
_2		DC2	"	2	B	R	b	r		DC2	ó	▓	┬	╥	Γ	≥
_3		DC3	#	3	C	S	c	s		DC3	ú	│	├	╙	π	≤
_4		DC4	$	4	D	T	d	t		DC4	ñ	┤	─	╘	Σ	⌠
_5			%	5	E	U	e	u			Ñ	╡	┼	╒	σ	J
_6			&	6	F	V	f	v			ª	╢	╞	╓	µ	÷
_7	BEL		'	7	G	W	g	w	BEL		º	╖	╟	╫	τ	≈
_8	BS	CAN	(	8	H	X	h	x	BS	CAN	¿	╕	╚	╪	Φ	°
_9	HT		)	9	I	Y	i	y	HT		⌐	╣	╔	┘	Θ	∙
_A	LF		*	:	J	Z	j	z	LF		¬	║	╩	┌	Ω	·
_B	CR	ESC	+	;	K	[	k	{	CR	ESC	½	╗	╦	▒	δ	√
_C	FF		,	<	L	\	l	|	FF		¼	╝	╠	▒	∞	n
_D	CR		-	=	M	]	m	}	CR		¡	╜	═	▓	φ	²
_E	SO		.	>	N	^	n	~	SO		«	╛	╬	▓	ε	■
_F	SI		/	?	O	_	o	⌂	SI		»	┐	╧	▓	∩	SP

(Available with Proprinter emulation)

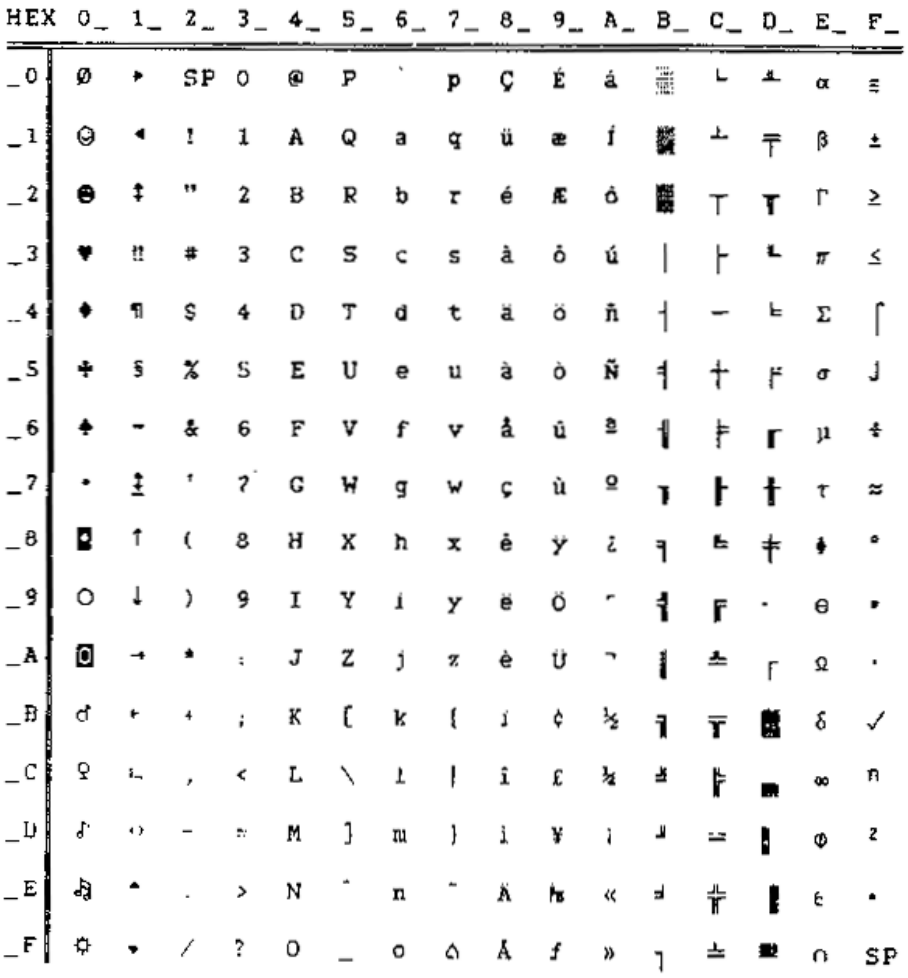
PC CHARACTER SET 2



HEX	0_	1_	2_	3_	4_	5_	6_	7_	8_	9_	A_	B_	C_	D_	E_	F_
_0	NUL		SP	0	@	P	`	p	Ç	É	á	▒	└	╨	α	≡
_1		DC1	!	1	A	Q	a	q	ü	æ	í	▓	┴	╤	β	±
_2		DC2	"	2	B	R	b	r	é	Æ	ó	▓	┬	╥	Γ	≥
_3	♥	DC3	#	3	C	S	c	s	â	ô	ú	│	├	╙	π	≤
_4	♦	DC4	$	4	D	T	d	t	ä	ö	ñ	┤	─	╘	Σ	⌠
_5	♣	§	%	5	E	U	e	u	à	ò	Ñ	╡	┼	╒	σ	⌡
_6	♠		&	6	F	V	f	v	å	û	ª	╢	╞	╓	µ	÷
_7	BEL		'	7	G	W	g	w	ç	ù	º	╖	╟	╫	τ	≈
_8	BS	CAN	(	8	H	X	h	x	ê	ÿ	¿	╕	╚	╪	Φ	°
_9	HT		)	9	I	Y	i	y	ë	Ö	⌐	╣	╔	┘	Θ	•
_A	LF		*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
_B	CR	ESC	+	;	K	[	k	{	ï	¢	½	╗	╦	█	δ	√
_C	FF		,	<	L	\	l	|	î	£	¼	╝	╠	▄	∞	n
_D	CR		-	=	M	]	m	}	ì	¥	¡	╜	═	▌	φ	²
_E	SO		.	>	N	^	n	~	Ä	₧	«	╛	╬	▐	ε	■
_F	SI		/	?	O	_	o	⌂	Å	ƒ	»	┐	╧	▀	∩	SP

(Available with Proprinter emulation)

PC ALL CHARACTER SET


HEX 0_ 1_ 2_ 3_ 4_ 5_ 6_ 7_ 8_ 9_ A_ B_ C_ D_ E_ F_
_0 Ø ► SP 0 @ P ` p Ç É á ▒ └ ╨ α ≡
_1 ☺ ◄ ! 1 A Q a q ü æ í ▓ ┴ ╤ β ±
_2 ☻ ↕ " 2 B R b r é Æ ó ▓ ┬ ╥ Γ ≥
_3 ♥ ‼ # 3 C S c s à ô ú │ ├ ╙ π ≤
_4 ♦ ¶ $ 4 D T d t ä ö ñ ┤ ─ ╘ Σ ⌠
_5 ♣ § % 5 E U e u à ò Ñ ╡ ┼ ╒ σ ⌡
_6 ♠ ▬ & 6 F V f v å û ª ╢ ╞ ╓ µ ÷
_7 • ↨ ' 7 G W g w ç ù º ╖ ╟ ╫ τ ≈
_8 ◘ ↑ (8 H X h x ê ÿ ¿ ╕ ╚ ╪ Φ °
_9 ○ ↓) 9 I Y i y ë Ö ⌐ ╣ ╔ · Θ ∙
_A ◙ → * : J Z j z è Ü ¬ ║ ╩ ┌ Ω ·
_B ♂ ← + ; K [k { ï ¢ ½ ╗ ╦ ▌ δ √
_C ♀ ∟ , < L \ l | î £ ¼ ╝ ╠ ▄ ∞ n
_D ♪ ↔ - = M] m } ì ¥ ¡ ╜ ═ ▐ φ 2
_E ♫ ▲ . > N ^ n ~ Ä ₧ « ╛ ╬ ▀ ε ■
_F ☼ ▼ / ? O _ o ⌂ Å ƒ » ┐ ╧ ▄ ∩ SP

(Available with Proprinter emulation)

PC MULTILINGUAL CHARACTER SET

HEX	0_	1_	2_	3_	4_	5_	6_	7_	8_	9_	A_	B_	C_	D_	E_	F_
_0	NUL		SP	0	@	P	`	p	Ç	É	á	▒	└	ð	Ó	-
_1		DC1	!	1	A	Q	a	q	ü	æ	í	▓	┴	Ð	ß	±
_2		DC2	"	2	B	R	b	r	é	Æ	ó	▓	┬	È	Ô	‗
_3	♥	DC3	#	3	C	S	c	s	â	ô	ú	│	├	Ë	Ò	¾
_4	♦	DC4	$	4	D	T	d	t	ä	ö	ñ	┤	─	È	õ	¶
_5	♣	§	%	5	E	U	e	u	à	ò	Ñ	Á	┼	ı	Õ	§
_6	♠		&	6	F	V	f	v	å	û	ª	Á	ã	í	µ	÷
_7	BEL		'	7	G	W	g	w	ç	ù	º	À	Ã	Ì	þ	¸
_8	BS	CAN	(	8	H	X	h	x	ê	ÿ	¿	©	╚	Í	Þ	°
_9	HT		)	9	I	Y	i	y	ë	Ö	®	╣	╔	·	Ù	¨
_A	LF		*	:	J	Z	j	z	è	Ü	¬	╝	╩	┌	Ú	·
_B	CR	ESC	+	;	K	[	k	{	ï	ø	½	╗	╦	▒	Û	¹
_C	FF		,	<	L	\	l	|	î	£	¼	╜	╠	▄	ý	³
_D	CR		-	=	M	]	m	}	ì	Ø	¡	ç	═	|	Ý	²
_E	SO		.	>	N	^	n	~	Ä	×	«	¥	╬	Ì	-	■
_F	SI		/	?	O	_	o	⌂	Å	ƒ	»	┐	¤	▀	´	SP

(Available with Proprinter emulation)

TI-810 Character Set
(Available with TI-810 Emulation)

Character	Hex Value	Decimal Value
(space)	20	32
!	21	33
“	22	34
#	23	35
$	24	36
%	25	37
&	26	38
‘	27	39
(	28	40
)	29	41
*	2A	42
+	2B	43
,	2C	44
-	2D	45
.	2E	46
/	2F	47
0	30	48
1	31	49
2	32	50
3	33	51
4	34	52
5	35	53
6	36	54
7	37	55
8	38	56
9	39	57
:	3A	58
;	3B	59

Character	Hex Value	Decimal Value
X	58	88
Y	59	89
Z	5A	90
[	5B	91
\	5C	92
]	5D	93
^	5E	94
_	5F	95
‘	60	96
a	61	97
b	62	98
c	63	99
d	64	100
e	65	101
f	66	102
g	67	103
h	68	104
i	69	105
j	6A	106
k	6B	107

Note: Using Configuration Option 201, Language, choice 3, ASCII - EBCDIC, replaces the three ASCII characters [ ] ^ (hex values 5B, 5D, 5E) with the three EBCDIC characters ¢ | ¬ respectively. Refer to Chapter 5 of this manual.

Note: This table gives both the hexadecimal and decimal value of the character codes.

Appendix D. Consumables

The tables below provide a list of part numbers for ribbons and print heads used by the 1330.

Ribbons

Part Number	Description	Estimated Life
955362-001	Black, nonshifting	22 million
955870-002	4-color primary	22 million per track

Print Heads

Part Number	Description	Estimated Life
953567-001	18-wire print head replacement kit (1330-X02)	300 million

Appendix E. Character Count Record

The form below provides a convenient place to record the printer's character count. The character count should be recorded each time the print head is replaced. See Chapter 4 for instructions on getting the character count. See Chapter 7 for print head replacement instructions.

	Style	Date	Character Count
First print head replacement	_____	_____	_____
Second print head replacement	_____	_____	_____
Third print head replacement	_____	_____	_____

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